AMERICAN GAS JOURNAL

88th YEAR | JULY 1946 | VOL. 165, NO. 1

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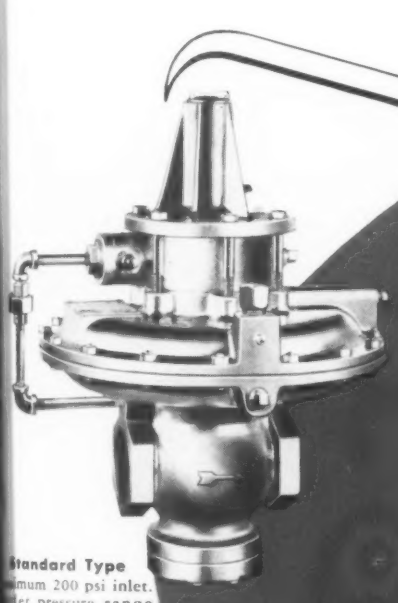

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Maximum 200 psi inlet. Outlet pressure range from 2 oz. to 20 psi depending upon spring setting. 2-inch connections only.

HANDLE ALL THESE SERVICES WITH *Accuracy* AND *Economy*

TOWN BORDER STATIONS
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SMALL DISTRIBUTION SYSTEMS
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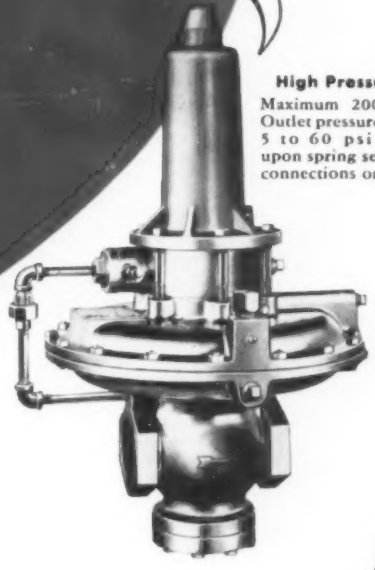

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Maximum 200 psi inlet. Outlet pressure range from 5 to 60 psi depending upon spring setting. 2-in. connections only.

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ROCKWELL MANUFACTURING COMPANY
PITTSBURGH 8, PA.

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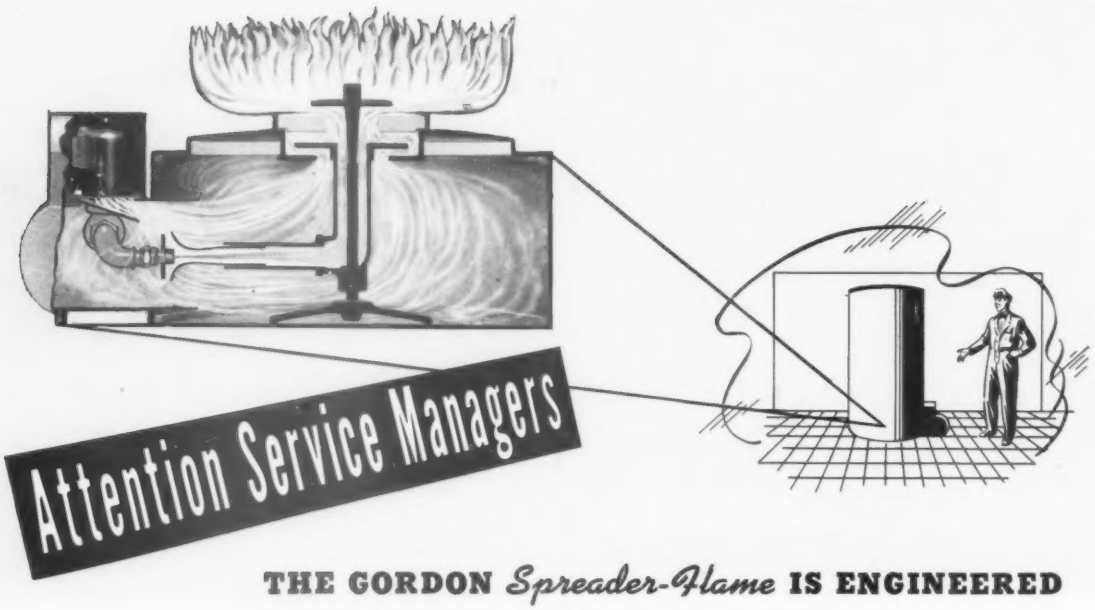

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GAS

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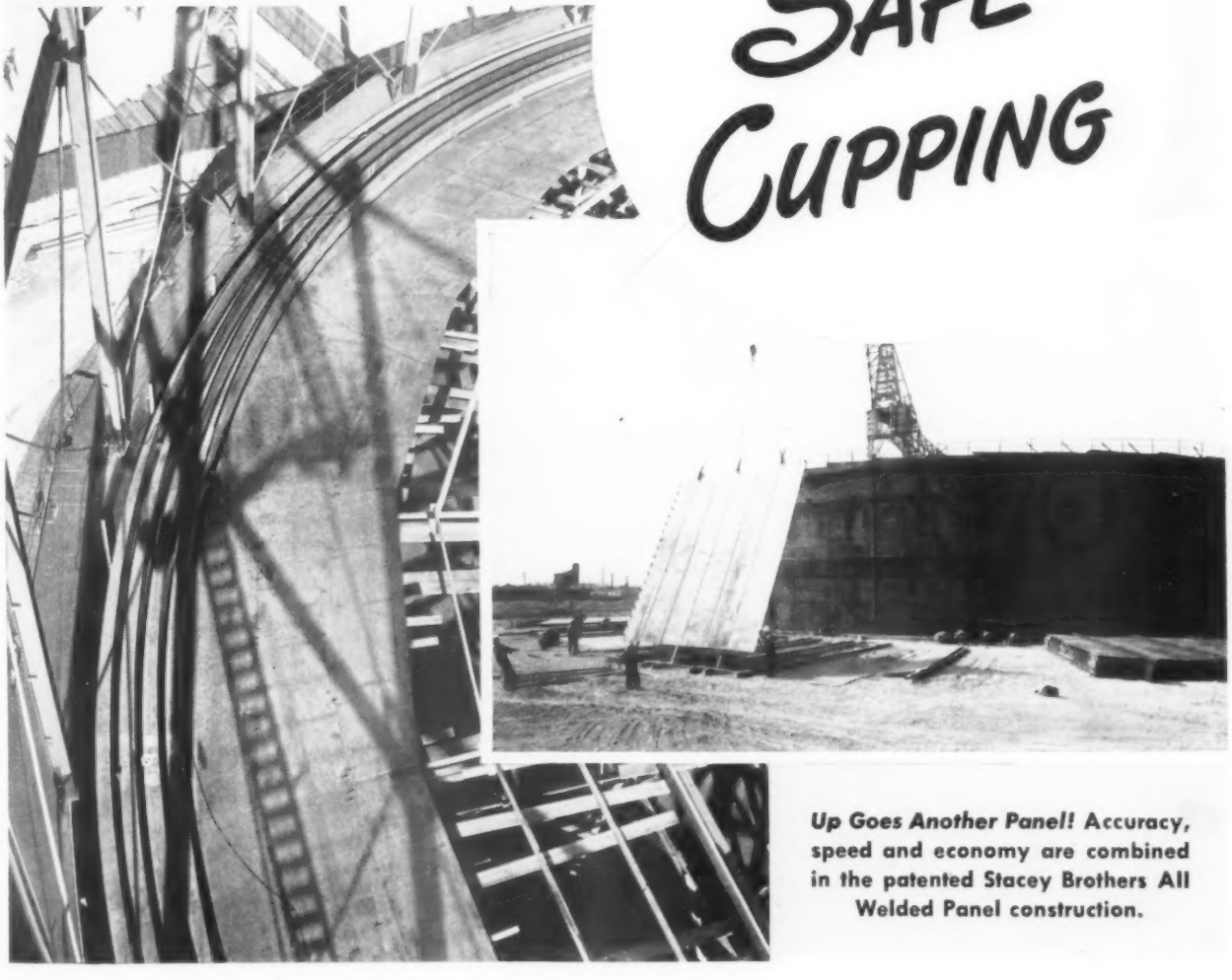

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That's the kind of workmanship you get with Stacey Brothers All-Welded Panel construction!

This wet seal holder, one of our most recent installations—at Long Beach, California—has a capacity of 5,000,000 cubic feet. Five lifts bring it to a height of 211 feet—yet each lift nests *true* in a space less than one-half of one per cent of the 100 ft. radius. That's close tolerance!

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ALL-WELDED GAS HOLDERS

AMERICAN GAS JOURNAL, July, 1946. Vol. 165, No. 1. Published monthly by American Gas Journal, Inc., at 34 North Crystal St., East Stroudsburg, Pa., Executive and Editorial offices at 53 Park Place, New York 7, N. Y. Entered as second-class matter October 7, 1928, at the post office at East Stroudsburg, Pa., under the Act of March 3, 1879. Printed in U.S.A.

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★

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COAST TO COAST, GAS COMPANIES ARE ENTHUSIASTIC

Telegrams and letters . . . pouring in from Gas Companies in every part of the country . . . applaud Servel's exciting new promotional success, the Homemaker's Digest. Read what they say:

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Standardized **MECHANICAL JOINT**
PIPE

ON BRIDGE LINES YOU CAN SEE HOW DRESSER *Flexibility* PROTECTS

AGAINST STRESSES FROM

- Temperature Variation
- Traffic Vibration
- Pipe Movement

Exactly the same as it does underground. Whether a pipeline is high in the air or deep in the earth, Dresser Couplings protect it against harmful joint stresses, by providing FLEXIBILITY with TIGHTNESS.

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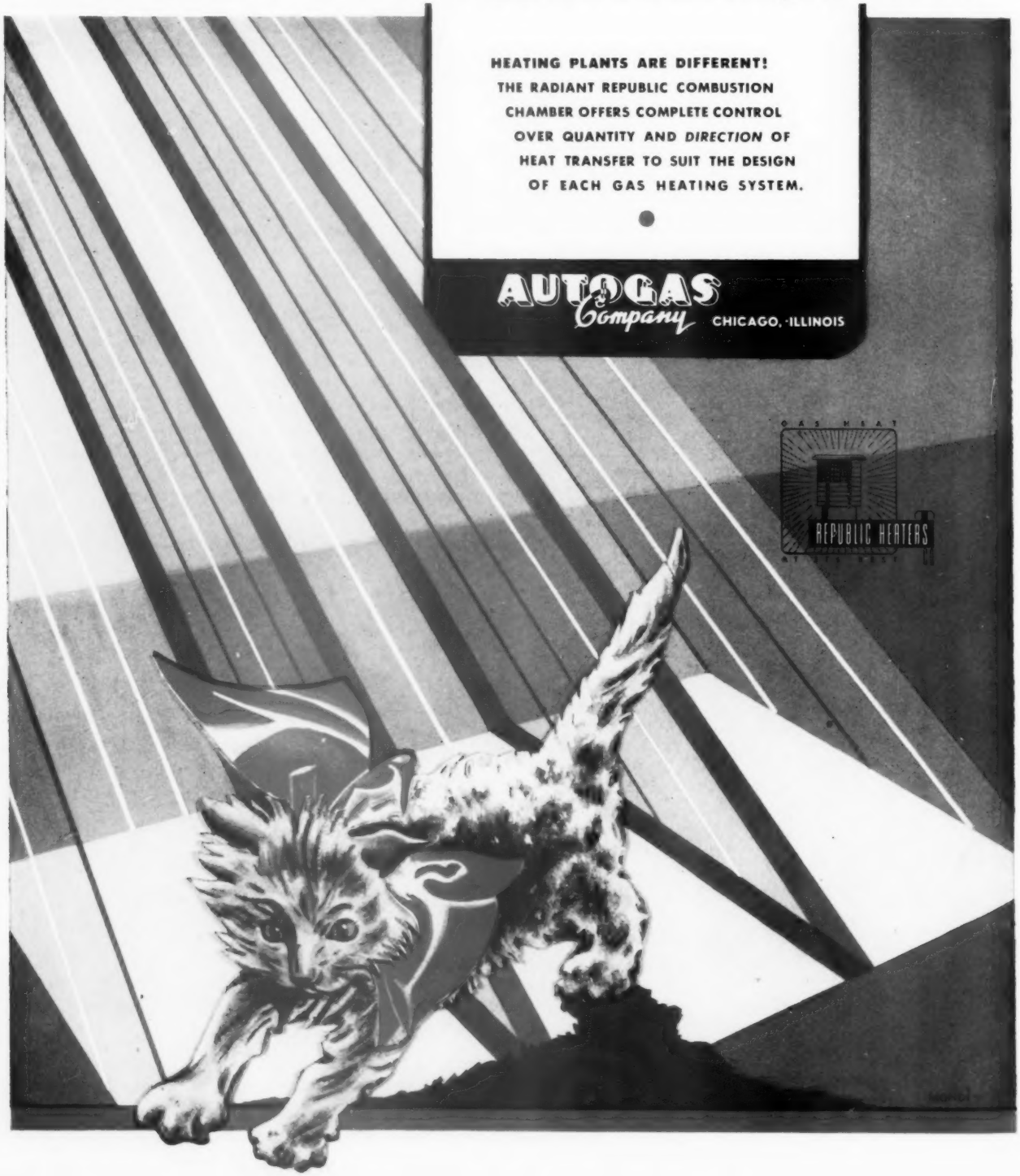
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THE RADIANT REPUBLIC COMBUSTION CHAMBER OFFERS COMPLETE CONTROL OVER QUANTITY AND *DIRECTION* OF HEAT TRANSFER TO SUIT THE DESIGN OF EACH GAS HEATING SYSTEM.
AUTOGAS Company CHICAGO, ILLINOIS
GAS HEAT
REPUBLIC HEATERS

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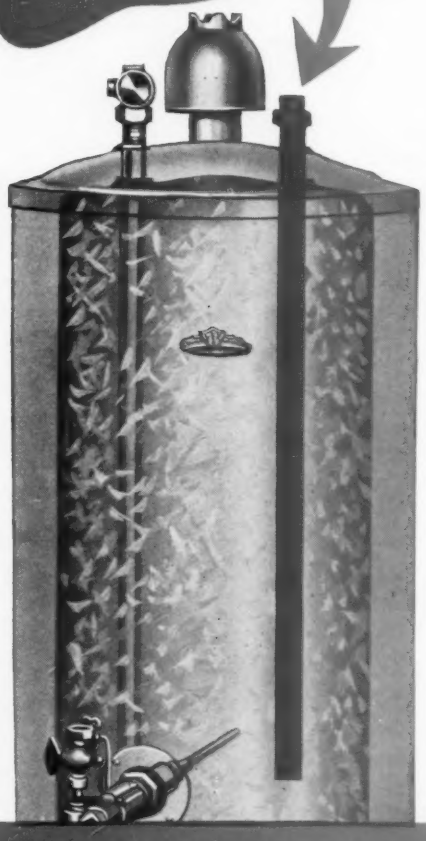
IS RUST A MUST IN HOT WATER STORAGE TANKS?

"Elco" Trade Mark Registered

is the answer!

The "Elno Protector" for Ferrous Tanks Scientifically Forestalls Corrosion



In the "Elno Protector" corrosion has finally met its match! This amazingly effective yet simple device has shown in tests how admirably it does the required job. What's more—it costs but little to apply to present or new storage water heating installations of any type!

The "Elno" protects by sacrificing *itself*. Through an electro-chemical reaction it bears the brunt of corrosive attacks of various kinds within the tank, leaving the tank itself unaffected and the water entirely free of rust. This should not be mistaken for a rust-decolorizing process—rust simply doesn't start.

Although the protective action of the "Elno" is continuous, its rate of decomposition is very slow. Under generally-prevailing water conditions, both the protective element and the tank may confidently be expected to outlast other parts of the water heating installation.

This inexpensive device gives galvanized steel tanks the practical immunity from corrosion and rust that hot water users have sought for many years. Such immunity, experts agree, is all that conventional tanks need to make them ideal for hot water storage purposes—superior, in fact, to non-ferrous or specially processed steel tanks the cost of which is excessive on a service-value basis.

A Product of Electro-Chemical Research

A complete scientific explanation of HOW the "Elno Protector" functions cannot be attempted here. Its development is the result of years of study of cathodic protection of metals, a project conducted in cooperation with a nationally-known engineering school, and based on information gained through many previous years of research on water heaters and water heating problems.

For detailed technical information which establishes the practicability of applying cathodic protection to hot water storage tanks with the "Elno Protector", write for Bulletin No. EB-102, which is now in process of publication.

PATENT APPLIED FOR

THE CLEVELAND HEATER CO.

2310 Superior Ave. **Cleveland 14, Ohio**

No Expensive Special Tank Needed When the "Elno Protector" is Used

CLEAN, RUST-FREE HOT WATER NOW ASSURED AT LOWEST EQUIPMENT COST

JULY
1946

AMERICAN
GAS JOURNAL

VOLUME 165
No. 1

Joint Production and Chemical Conference Of American Gas Association

THE TECHNICAL SECTION of the American Gas Association held the 1946 Joint Production and Chemical Committee Conference at the Pennsylvania Hotel, New York, June 3, 4 and 5.

The program covered many problems facing the industry and was arranged to be of value to the technical men in all branches.

Dr. C. W. Wilson, Chairman, Chemical Committee, presided at the opening session. He introduced E. J. Boothby, President, American Gas Association, who referred specially to the industry's expanded research program, and H. Carl Wolf, Managing Director of the A.G.A. who said in part: "gas production is undergoing a metamorphosis based on the realization that the gas industry is a chemical industry. The industry is exploring ways of converting solid fuels to gas and of capturing chemical by-products both in gas manufacture and in the utilization of natural gas."

Evaluation of Enriching Oils, by S. P. Cauley, Socony-Vacuum Oil Co., New York, contained a brief review of various methods of estimating the enriching value of oils on the basis of physical properties. Data presented shows that the relative paraffinicity of an oil is the greatest factor affecting its gas-making properties. Reasons for occasional large deviations of actual and estimated enriching values were studied.

Coal Production and Preparation for the Market, by H. F. Hebley, Pittsburgh Coal Co., Pittsburgh, Pa., was a discussion on coal for use in the manufacture of city gas, and described the mining and cleaning processes of such coal at the mines.

Report on Water Gas Set Capacity, by F. W. Hartzel, United Engineers and Constructors, Inc., Philadelphia, Pa., and **Report on Tar Dehydration,** by J. G. Sweeney, The Brooklyn Union Gas Co., Brooklyn, N. Y., followed.

R. Van Vliet, chairman, Gas Production Committee, presided at the afternoon session.

LP Gases—Plant and Distribution Practices, by E. G. Boyer, Philadelphia Electric Company, Philadelphia, Pa., will be found elsewhere in this issue of the *Journal*.

Dinner Meeting Technical Section, Managing and Advisory Committees, June 4th at Pennsylvania Hotel, N. Y. C.

Left to Right: Dr. A. W. Gauger, State College, Pa., Dr. F. E. Vandaveer, Cleveland, R. Van Vliet, Staten Island, F. B. Parke, Brooklyn, Dr. Channing W. Wilson, Baltimore, W. R. Fraser, Detroit.

Comments on the Reforming of LP Gas and Heavier Oils, by C. B. Glover, United Engineers and Constructors, Inc., Philadelphia, Pa., followed.

European Gasification Processes, by E. S. Pettyjohn, Capt., U.S.N.R., Chicago, Ill., was a brief presentation of the Lurgi-Spulgas process for carbonization of brown coal briquettes, the Bubiag-Didier process for carbonization and/or gasification of brown coal briquettes and of the Kopper's and Pintsch-Hillebrand processes for complete gasification of brown coal briquettes with slides showing flow diagrams and photographs of installations in middle Germany and the Ruhr.

Hudson W. Reed, Chairman, Manufactured Gas Department, presided at the Tuesday morning session.

Organic Sulphur, by Dr. E. W. Guernsey, Chairman, Subcommittee on Organic Sulphur, Baltimore, Md., and H. Hakewill, and E. M. Rueck, Institute of Gas Technology, Chicago, Ill. was the first paper presented.

This paper had to do particularly with one phase of the Organic Sulphur Research work now in progress; namely, the development and proving of methods for the determination of specific organic sulphur compounds in gas. The organic sulphur compounds in gas such as COS and CS_2 and H_2S and mercaptans, thiophenes, and traces of residual sulphur of unknown composition may be analyzed in groups or as total sulphur by combustion analysis where the products of combustion are absorbed in basic media and then determined by $BaSO_4$ precipitation. Individual sulphur components may also be determined to a fine degree of accuracy by selectively removing specific sulphur compounds with special agents and analyzing the reagents by titration or gravimetric analysis. The procedures are especially designed to give reliable results when working with 1.0 cubic foot samples of low sulphur gas, namely, 1 to 10 grains of sulphur per 100 cubic feet. The apparatus was described and illustrated and the procedures were fully explained.

Mixed Gas Research, by W. R. Fraser, Michigan Consolidated Gas company, Detroit, Mich., was a discussion of the work recently completed and published in Research Bulletin #36 on the "Interchangeability of Other Fuel Gases with Natural Gases," and an outline of the future Mixed Gas Research program on manufactured and mixed gases, sponsored by the Gas Production Research Committee.

Under the subject of Gas Production Research, the following items were discussed.

Introduction, by P. T. Dashiell, Chairman, Gas Production Research Committee, A.G.A. Manufactured Gas Department was followed by:

Reforming of Hydrocarbons, by E. G. Boyer, Philadelphia Electric Company, Philadelphia, Pa., and

Left to Right: F. W. Hartzel, Philadelphia, C. B. Glover, Philadelphia, A. S. Budd, Philadelphia, J. W. Richards, Newark, N. J., R. S. Emanuel, Harrison, N. J., J. Hawley Taussig, Philadelphia.

Sulphur Resistant Catalysts — Water Gas Catalysts—Tar Investigation, by E. J. Murphy, The Brooklyn Union Gas Company, Brooklyn, N. Y.

Fundamental Studies of Water Gas Reactions, by Dr. C. W. Wilson, Consolidated Gas Electric Light and Power Company of Baltimore, Baltimore, Md., was the next paper presented, followed by

Flash Pulverization — Other Gasification Projects, by F. J. Pfluke, Chairman, Technical Advisory Committee, A.G.A. Manufactured Gas Department.

A Motion Picture: **Flotation Painting of Waterseal Gas Holders,** ended the forenoon session. Complete description and methods used was published in the June issue of the *Journal*.

The afternoon was devoted to Round Table Luncheon Conferences.

Luncheon No. 1—**Carbonization and Coke,** Elliott Preston, Chairman, Koppers Company, Pittsburgh, Pa.

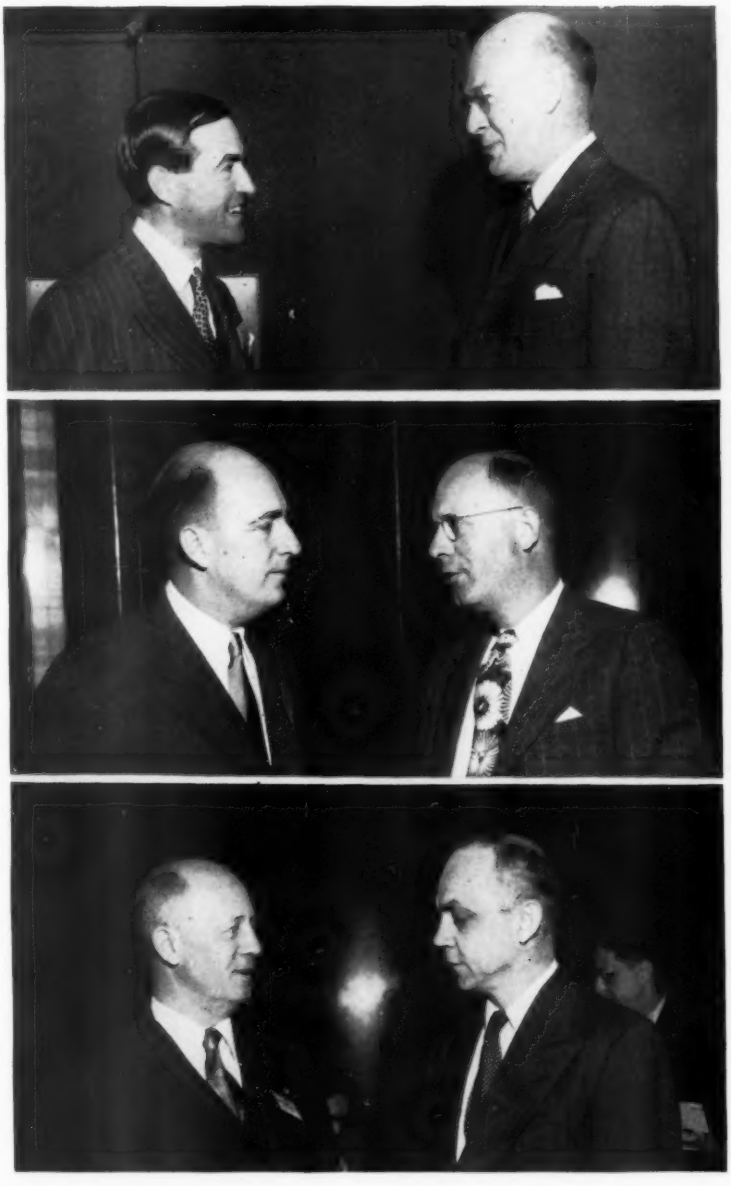
Luncheon No. 2—**Chemistry in the Gas Industry,** H. A. Lockhart, Chairman, Haverhill Gas Company, Haverhill, Mass.

Luncheon No. 3—**High B.T.U. Gas,** C. L. Hulswit, Chairman, Rockland Gas Company, Spring Valley, N. Y.

Luncheon No. 4 — **Water Gas Operation,** P. T. Dashiell, Chairman, The Philadelphia Gas Works Company, Philadelphia, Pa.

Dr. C. W. Wilson was chairman of the Wednesday morning session.

Blending Properties of Low and Medium Volatile Coals as Determined in the Bureau of Mines and A.G.A. Apparatus, by J. D. Davis and D. A. Reynolds, U. S. Bureau of Mines, Washington, D. C., gave the Results of Bureau of Mines—American Gas Association (BM-A.G.A.) 900° C. carbonization tests of coking coals of different ranks. Twelve low-volatile and eight medium-volatile coals were carbonized separately and as binary blends with 70 and 80 percent Pittsburgh-burgh-bed coal; five low-volatile were blended with various high-volatile coals in the same proportions. The average coking power of medium-volatile coals approximately equalled that of low-volatile coals and this equality held true if

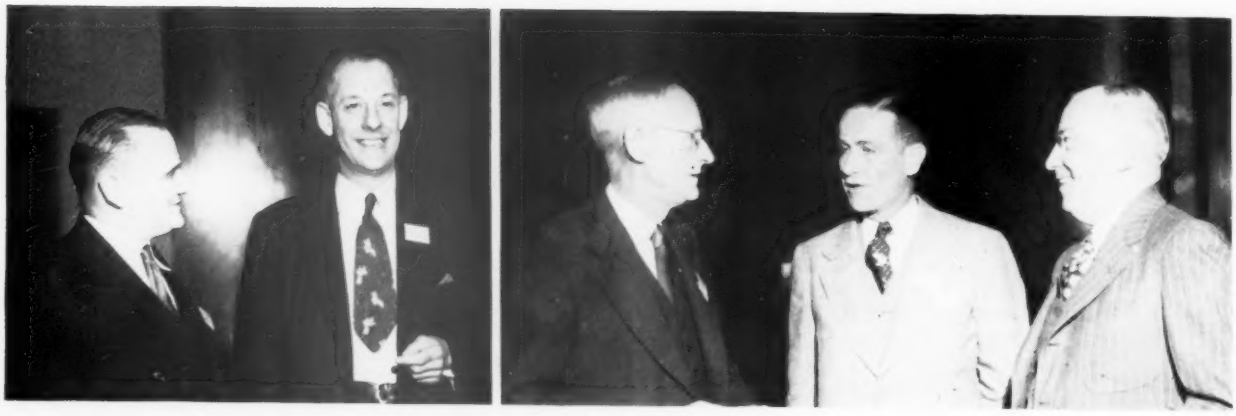


Upper: Left to Right: J. A. Benn, London, England; E. J. Boothby (president - A.G.A.) Washington, D. C.

Center: J. T. Stine, New Orleans and T. H. Kendall, Pittsburgh.

Lower: Col. G. T. Bentley, Detroit, and Dr. E. W. Guernsey, Baltimore.

Left to Right: H. K. Seeley, Syracuse, New York, P. T. Dashiell, Philadelphia, Col. Hudson W. Reed, Philadelphia, Edwin L. Hall (A.G.A. Headquarters - Secretary-Coordinator Gas Production Research Committee)



Left to Right: Louis Shnidman, Rochester, A. C. Sedlachek, Philadelphia, C. S. Goldsmith, Brooklyn, A. C. Cherry, Cincinnati, E. L. Sweeney, Everett, Mass.

the coals were carbonized separately or as blends with Pittsburgh coal. The coking power of medium- and low-volatile coals generally indicated their value as blending coals; this correlation was closer for medium-volatile coals.

In the **Report of Subcommittee on Use of Oxygen in Gas Manufacture,** by L. L. Newman, Chairman, U. S. Bureau of Mines, Washington, D. C., the conclusions of the Subcommittee are:

Delegates from the Peoples Gas Light & Coke Company, Chicago, Illinois, included S. J. Modzikowski, E. W. Andrews, H. J. Wiedenbeck, W. H. Isaacs.

1. The technical phase of gasification by means of oxygen may be taken for granted, and that suitable apparatus for the gasification of any desired fuel will be developed.

2. Gas produced by means of oxygen must be considered as a base load proposition.

3. Means of enrichment will have to be found for gas produced from solid fuel by means of oxygen if the present distribution standards will remain in effect.

4. Oxygen costs will be low enough to justify its use in gasification.

The conclusions are supported by a discussion of several gasification and oxygen production processes.

R. Van Vliet was Chairman of the last session.

G. T. Bentley, Chairman, Michigan Consolidated Gas Company, Detroit, Mich., presented the

Report of Subcommittee on High B.T.U. Gas.

Control of Bulk Densities in Coke Ovens—Studies on Precision and Application of Various Testing Methods, was the title of a paper presented by H. S. Auvil, L. D. Schmidt and H. G. Graham, U. S. Bureau of Mines, Washington, D. C.

Significance of bulk density control in by-product ovens and methods used for attaining control are discussed. Working details are given for the calculation of precision indexes (such as the standard deviation) from data ordinarily available at coke and gas plants, and the calculations are applied to find the precision of various methods of testing bulk density of coal.

A.S.T.M. Committee activities were covered by Dr. A. W. Gauger, Chairman Subcommittee D-3, and by V. J. Altieri, Chairman Subcommittee D-16.

Most of the papers were long and highly technical, and space does not permit a complete analysis of them. Nearly all papers presented were printed and a copy of the complete paper desired can be had by addressing A.G.A. headquarters.

Approximately 450 delegates attended the several sessions.

Dealer Cooperation and Appliance Standardization

By

S. B. Severson

President, Dominion Natural Gas Company Ltd., Buffalo, N. Y.

IN THE early days of the gas business on this continent and up to 1900, or thereabouts, all gas burning appliances, including lighting fixtures, were sold and installed mostly by plumbers, specialty dealers, and hardware stores. These appliances were poorly designed, unattractive, and inefficient. All the complaints arising from their use were attributed to the gas furnished by the gas companies rather than to the appliance itself or its installation. To overcome this unfavorable condition, to improve customer relations, and to stimulate greater demand for their product, the gas companies were faced with the necessity of inaugurating their own merchandising policies. Sales Departments were started and developed to a high degree with such excellent results that manufacturers of gas appliances were encouraged to co-operate in perfecting their appliances to meet the increased demands. As a result today we have the modern CP range and the highly developed automatic water heaters, room heaters, furnaces, refrigerators, to say nothing of industrial equipment. All of these are in satisfactory use by millions of gas customers. Today there is no question as to the ability of our Sales Departments to sell our product. This fact, together with the efficient efforts of our production and service departments, should make our business secure. On the other hand, we have perhaps neglected the business people in our communities too long and as a result have sacrificed much good will since they could not compete with us because our sales activities were so intensive, our prices so low and our terms so liberal.

The electric companies, on the other hand, have cooperated with these business people and because of more kinds of appliances and of the very large manufacturing companies making these appliances, favorable merchandising programs and sales resulted. The large manufacturing companies have been of tremendous assistance to electric companies and business people through their national and local advertising and through the thousands of such outlets in communities. This electric competition is very real and damaging to the gas companies and therefore all the possible outlets for sales of gas appliances should be encouraged. I am sure that we will have much good will if our business friends on Main Street get the opportunity to sell gas appliances in a profitable way.

Vitalize Our Sales Policy

Many gas companies in the years prior to the war saw the need of a policy whereby dealers could be brought into their sales program either in part or by handling the entire sales of appliances. The results at that time were encouraging, especially where well developed programs were followed. During the war period many companies gave serious consideration to dealer co-operation and participation as is evidenced by the large number of dealer plans now being used and developed in the post-war period. This present period is an opportune time to revitalize our sales policies with emphasis on dealer co-operation and participation since most companies have entirely eliminated or greatly reduced their sales departments during the war years. Careful and extensive studies have been made by many companies of dealer plans and many of these have been made available to the industry. Since the best and most effective work in any endeavor is done by that interest having most at stake, it will be necessary for the gas company to be assured that new and up to the minute appliances are available to satisfy the customers' desires and demands. Since dealers are primarily interested in profits and not in the appliance or the fuel which it uses, the company must create conditions that will promote gas burning appliance sales. These favorable conditions can be created by various means, especially through advertising, sales assistance, sales programs, educational programs, financing dealer paper, and other helps. The gas company must set the standard for the appliances that are promoted and at the same time make it possible for the dealer to obtain attractive profits through the sale of these modern, high grade, attractive, and efficient gas appliances.

In many of the so-called "dealer plans" in the past, the companies put forth most of the effort while the dealers secured what amounted to a "handout." This kind of a plan is a mistake and should be discouraged. Any dealer plan must be mutually profitable and acceptable to both parties since each party acquires new responsibilities, the acceptance of which must be obligatory if the plan is to succeed. The best plans will offer all dealers opportunity for profits through their own efforts and as such should produce healthy competition among them. At the same time, the gas companies should always be in a position to enter actively into the picture to create customer acceptance of modern appliances that will meet all competition.

Survey of Market Plans

During the war years our company made a careful survey of many dealer plans and as a result of such study has formulated a plan we believe to be best suited for our purpose and conditions. At the same time a careful survey was made to determine the preference of our customers as to kinds of fuel and what appliances they intended to buy in the immediate post-war period. This customer survey showed a large majority were more favorable to gas than electricity, undoubtedly due to our intensive and successful CP range promotion stressing the modernity of gas. It also revealed that the automatic gas water heater had almost universal appeal over electricity, undoubtedly due to superiority in operating costs, volume, and fast recovery.

It showed that while gas refrigeration is still in its infancy, it has big appeal. On the other hand, gas home heating is so attractive and desired that the gas companies may find the demands caused by this service a real headache.

We also made a prospective dealer

survey and found great willingness on the part of specialty dealers, plumbers, hardware, and furniture merchants to join with us in appliance selling. They were enthusiastic about the profit possibilities in these appliances and we were greatly encouraged by their interest in our suggestion for meetings stressing sales training and instruction for installation and service to customers. It is confidently believed by us that the more help we give dealers the more gas appliances will be sold and the more dealers will become more gas minded.

Some dealers may be able to finance their own activities but since many, especially plumbers and smaller dealers, may not be so fortunate, arrangements can be made whereby credit corporations finance dealers' paper and stock. At the present time there are several such corporations that are in the field for this business.

As I stated above, our company has given careful consideration to dealer plans and I give you herewith some of the essential features of our plan.

Purpose

The purpose of the proposed dealer co-operation program is:

(a) To create and maintain mutual understanding between gas appliance dealers, gas appliance manufacturers, and the Gas Company.

(b) To promote and sell modern gas appliances that will render a safe, dependable, and highly satisfactory service.

(c) To invite participation by appliance dealers in active merchandising of modern gas appliances.

Basic Principles

(a) It is a responsibility of the Gas Company to protect its investment by maintaining and increasing public acceptance of Gas as a modern fuel by a sales promotion program, which includes: An appliance sales force of its own, a co-operating dealer plan, an advertising program, and home service personnel for customer guidance.

(b) Maintaining and increasing public acceptance for Gas can only be achieved through the sale and installation of Gas appliances that properly interpret its modernity and convenience. It includes developing new use market, such as incineration, laundry drying, all-year-round air conditioning, promotion of "New Freedom" kitchens, etc.

(c) Gas Ranges, automatic Gas water heaters, and Gas refrigerators enjoy wide public acceptance, and are items which dealers can readily sell.

(d) The dealer should obtain a satisfactory merchandising profit on the sale of gas appliances. It must be as profitable for him to sell gas appliances as similar competitive appliances.

(e) Gas Company sales activities and salesmen's compensation in relation to dealer sales should be designed to promote harmony between dealer and Gas Company salesmen.

Definitions

1. **A Co-operating Gas Appliance Dealer** is one who acquires his Gas appliances direct from a manufacturer or wholesaler other than the Gas Company; agrees to the conditions outlined in this program and plans to actively merchandise one or more kinds of approved gas appliances.

2. **A Participating Dealer** is one who acquires his gas appliances from the Gas Company at wholesale; agrees to the conditions outlined in this program and plans to actively merchandise one or more kinds of approved gas appliances.

3. **A Commissioned Dealer** is one not fully established and who sells appliances occasionally for the Gas Company on a commission basis.

4. **An approved gas appliance** is one which is approved by the American Gas Association and the Gas Company.

Manufacturers

The manufacturer shall:

(1) Recognize fully the importance of establishing dealers for the promotion and sale of approved and quality gas appliances.

(2) Arrange through co-operation with the Gas Company to furnish his dealers with approved gas appliances that will perform a safe, dependable, and satisfactory gas service on the type of gas served.

(3) Set up an active dealer program for the promotion of approved gas appliances in co-operation with the dealer-gas company program.

(4) Establish dealer outlets in sufficient number to effectively distribute his product where he does not sell to the Gas Company.

(5) Promote the sale: (1) CP gas ranges; (2) high quality automatic gas water heaters with a tank guarantee of five years or more; (3) gas refrigerators, and (4) other approved gas appliances.

(6) Assist dealers in arranging floor displays of approved gas appliances.

(7) Make available for dealers effective promotional and advertising material.

(8) Co-operate with the Gas Company in conducting dealer educational meetings.

Dealers

The dealer shall:

(1) Purchase for resale:

(a) Approved automatic water heaters (with a tank guarantee 5 years or more) direct from the manufacturer or distributor.

(b) Approved gas ranges direct from the manufacturer or distributor. All gas ranges retailing for $125.00 or more shall be CP models.

(c) Gas ranges, water heaters, and Servel gas refrigerators from the Gas Company where he elects to participate in the sale of the same gas appliances as handled by the Gas Company.

(2) Maintain an adequate showroom and display several current models of approved gas ranges and/or gas refrigerators. Display facilities will not be a requirement if only automatic gas water heaters are handled.

(3) Recommend and aggressively sell approved gas appliances.

(4) Agree to accept the installation specifications set up by the Gas Company.

(5) Arrange to provide maintenance and service during the warranty period of all approved gas appliances with the exception of gas refrigerators that he acquires from the Gas Company.

(6) Furnish the Gas Company with information and reports on the sales and installation of all gas appliances.

(7) Repossess gas appliances as directed by the finance company and reacquire them from the finance company where required to do so by contract with the finance company.

(8) Participate in instruction on gas utilization, gas appliance installation, and sales training programs.

(9) Co-ordinate his gas appliance advertising with the Gas Company, Manufacturer, and Distributor, wherever and whenever feasible.

(10) Take an active part in seasonal gas appliance sales campaigns and tune his displays to such programs.

Gas Company

The Gas Company shall:

(1) Help the manufacturer, distributor, or dealer in the preparation

f required specifications on gas appliances for their safe, satisfactory, nd economical operation on the type of gas served. Such appliances bearng the A.G.A. laboratory seal will be considered as approved as long as they render the above described service.

(2) Assist the manufacturer and distributor in establishing dealers for approved gas appliances.

(3) Provide certain participating dealers at wholesale price the same line of gas ranges, water heaters, and refrigerators that the Gas Company sells.

(4) Promote the use of gas through the sale of approved gas appliances at a price level that will permit a dealer to compete and make a normal profit.

(5) Compensate its salesmen to invite and not discourage dealer sales of approved gas appliances.

(6) Protect the Participating Dealer on his gas appliance prospects for a specified period as far as Gas Company sales are concerned.

(7) Establish in its organization, personnel to assist dealers in promotion and sale of approved gas appliances.

(8) Assist dealers in obtaining comparable facilities with those in effect by the Gas Company for:

(a) Financing time payment sales of approved gas appliances by Co-operating, Participating and Commissioned Dealers with monthly payments paid at the Gas Office.

(b) Financing Gas appliance displays for Participating Dealers.

(c) Delivery and installation of Gas appliances by another installer.

(9) Furnish necessary inspection of Gas equipment sold and installed under Dealer contract.

(10) Furnish without charge gas pressure regulators to Dealers for all gas ranges sold and installed on its lines, until regulators are furnished by manufacturers with the appliance.

(11) Give a commission of not more than 15% to Commissioned Dealers who are not qualified as fully established dealers but who occasionally sell gas appliances as part of their regular business.

(12) Provide without charge to dealer or customer, maintenance and service during the warranty period on gas refrigerators sold by the Gas Company to the dealer.

(13) Co-ordinate advertising and promotional sales activities to include dealer participation wherever and whenever feasible.

(14) Supply Co-operating and Participating Dealers, without charge, placques or other suitable means for identifying them as Co-operative Gas Appliance Dealers for the Gas Company.

(15) Conduct a gas utilization and sales training program for the dealer and his personnel.

(16) Assist in educating dealers' employees regarding the proper installation of approved gas appliances.

Today Trade Journals, Conference Committees and Association Conventions are all publicizing dealer participation plans. It is apparent that many gas companies in the post-war period plan to include in their sales programs the business people in their communities. From now on thousands of dealers are going to participate in the selling and installing of gas appliances. It will become increasingly desirable, therefore, that the closest co-operation exist between the gas companies, the manufacturers and the dealers. Such co-operation should, as in the past, produce many evolutionary changes and improvements. Such changes and improvements may well be brought about in the simplification and standardization of gas burning appliances which will reduce costs to the manufacturer, attain greater acceptance and satisfaction for the customer and lessen the need for expensive service by the gas company.

Standardization

This brings me to the crux of the subject, "standardization." By "standardization" I do not mean that all ranges, water heaters and other appliances should be exactly alike in color, design and detail, but rather each one should be a complete appliance, ready for full satisfying performance to the customer. As an illustration of what I mean by a complete appliance, I can think of no better example than an automobile.

There was a time, you will remember, when automobiles were made and sold which compared with the present day stream-lined cars were only partially complete. Yet no one dare say that those "jalopies" were giving complete satisfaction since whenever a customer purchased an automobile, it was necessary for him to install many accessories such as Klaxon Horns, bumpers, windshield wipers, spare tire, mirrors, and the like, to meet his desires. As new models came from the production line, year after year, these and other accessories were gradually added until today we have the complete machine which gives us so much satisfaction in ownership and performance.

To further illustrate, even with our present wonderful paved highways, it is still necessary, for satisfactory engine performance, to use dust filters to keep the gas and oil clean since there is always enough dust in the air on the highway to make this added part essential. Likewise, travelling along these highways the automobile has to travel up and down hills as well as on smooth places and to do this smoothly, regulation of the fuel delivered to the engine is required as well as a control of the ensuing temperatures. One could go on with this illustration but we must, I believe, agree that the complete automobile of today is an essential satisfying machine and yet, although each manufacturer has his own make with varying details, all automobiles are standard as to function and are tailored to meet the customers' desires.

As an aftermath of this observation while it is true no one today would regard it necessary for oil companies to sell automobiles in order to sell their products, it is equally true, as the past twenty-five years will show, that the tremendous demand for oil products has closely paralleled the tremendous advance in automobile use, design and performance. So likewise, the future of our sales both in appliance and service will be dependent upon the way in which we design our appliances to meet our customers' complete desires.

I am sure we can do this if the gas companies and manufacturers co-operate and plan for the delivery to all purchasers of a complete gas appliance. As an example of a complete gas appliance, in this case a range, I refer to the recent revised specifications of the CP range requirements as presented in Chicago recently by Mr. Carl Sorby of the George D. Roper Corporation. These specifications which follow, are the result of thirty-one Regional Planning Meetings submitted to the A.G.A. Committee on Improving Domestic Gas Appliances and call for a CP range to:

1. Display A.G.A. Laboratories Approval Seal.
2. Be equipped with automatic time control.
3. Be of flush-to-wall construction (back and both sides).
4. Have automatic oven ignition.
5. Have oven heat control.
6. Direct flue products away from wall.

7. Provide quiet operation of all drawers without undue friction or jamming.
8. Have effective stops on racks and drawers.
9. Have effective smokeless-type broiler pan.
10. Have automatic broiler ignition.
11. Provide 80% of grill area at minimum effective broiling area.
12. Have dual or high-low type top burners.
13. Have one or more giant top burners.
14. Have automatic top lighters.
15. Provide rust resisting top burner heads.
16. Have ovens capable of cooking or food processing at temperatures as low as 250° F.
17. Possess top burner efficiencies of not less than 45%.

To these requirements I believe should be added, as in the case of the automobile illustration, individual filters and regulators. The filter to make sure that dust particles and gum carried by the gas do not interfere with the proper burning of the pilots and the regulator to insure the constant pressure for which the burner was designed.

I believe that all gas appliance manufacturers should equip all models of ranges, water heaters, space heaters, gas furnaces and refrigerators with pilot filter and individual regulator. This seems particularly important now as we plan to embark on dealer participation plans, since dealers will not voluntarily install these accessories essential to complete customer satisfaction.

If manufacturers, gas companies, and dealers will co-operate in this respect I am sure much benefit will accrue to all of them. It may appear as a selfish interest of the gas company to ask that filter and regulator be added since thereby service expense will be reduced but we all must remember that in the end our customers' acceptance and satisfaction which must be our primary concern, if we are to stay in business, is dependent upon the installation of a complete and perfectly operating appliance.

This paper does not pretend to cover all details but I recommend closer co-operation between gas companies and manufacturers in order that we may produce the desired results. I feel sure this can and will be done, and that one of the greatest factors which can contribute to it is simplification and standardization.

Presented at the 39th Annual Convention, Canadian Gas Association, Murray Bay, Quebec, June 18-19-20-21, 1946.

Gas Appliance Manufacturers Association Holds Annual Meeting in Chicago

D. P. O'Keefe, President of O'Keefe & Merritt Co., Los Angeles gas range manufacturers, was elected President of the Gas Appliance Manufacturers Association at the Annual Meeting of the Association held in Chicago June 11-12. His term of office as President of G.A.M.A. starts October 1, 1946.

Among the problems discussed by the attending executives were production bottlenecks in materials and strikes which have prevented the industry from reaching the 50% increase in production over 1941 which expanded facilities make possible. Plans to assist government agencies, dealers and builders in providing equipment for housing and home and industrial modernization programs were discussed at group meetings of manufacturers of various types of equipment.

D. P. O'Keefe

The Association's other newly elected officers are: 1st Vice-President: John Robertshaw, President, Robertshaw Thermostat Co., Youngwood, Pa.; 2nd Vice-President: Frank Hoenigmann, Executive Vice-President, Florence Stove Co., Gardiner, Mass.; Treasurer; John Van Norden, Secretary, American Meter Co., New York, N. Y.

The meeting which was one of the largest ever held by the Association, brought together chief executives of manufacturers who produce more than 90% of all the gas appliances and equipment manufactured.

Membership in the Association has increased 40% in the past two years.

New gas clothes drier and summer and winter gas air conditioning divisions have been created to serve the means of the many manufacturers who have entered this field.

Following are the officers elected by various divisions and groups:

Domestic Gas Range Division—Chairman L. C. Ginn, American Stove Co.; Vice-Chairman R. S. Agee, Roberts & Mander Corp.

Hotel, Restaurant and Commercial Gas Equipment Division—Chairman Walter Rudolph, Savory Equipment Co.; Vice-Chairman S. E. Little, American Stove Co.

Gas Water Heater Division—Chairman Harold Handley, Handley Brown Heater Co.; Vice-Chairman W. G. Cartter, Day & Night Manufacturing Co.

Direct Heating Equipment Division—Chairman George McFadden, Ohio Foundry & Mfg. Co.; Vice-Chairman W. L. Thompson, L. O. Schoedinger Mfg. Co.

House Heating & Air Conditioning Equipment Division—Chairman C. A. Olsen, C. A. Olsen Mfg. Co.; Vice-Chairman J. P. Hutchinson, Bastian-Morley Co.

Industrial Gas Equipment Division—Chairman E. J. Haedike, Mid-Continent Metal Products Co.; Vice-Chairman Herman Gehnrich, Gehnrich & Gehnrich, Inc.

Thermostatic Control & Accessories Division—Chairman T. T. Arden, Robertshaw Thermostat Co.; Vice-Chairman C. S. Stuckenholt, W. J. Schoenberger Co.

Gas Valve Division—Chairman R. L. O'Brien, Detroit Brass & Malleable Works; Vice-Chairman Frank X. Henke, Harper-Wyman Co.

Gas Furnace Group—Chairman I. E. Seith, Forest City Foundries Co.; Vice-Chairman D. J. Luty, Gar Wood Industries.

Gas Boiler Group—Chairman J. R. Scott, L. J. Mueller Furnace Co.; Vice-Chairman L. H. Hobson, General Electric Co.

Gas Conversion Burner Group—Chairman G. A. White, Handley Brown Heater Co.; Vice-Chairman E. A. Weaver, Surface Combustion Corp.

"CP" Manufacturers Group—Chairman E. C. Sorby, Geo. R. Roper Corp.; Vice-Chairman A. B. Ritzenthaler, Tappan Stove Co.

It's No Gamble

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Your ace in the hole is Universal's experience in manufacturing finer, more dependable ranges for more than seven decades. Universal Gas Range designs are based upon a complete understanding of the needs and desires of the American housewife. More attractive in looks with greater performance than ever—the Universal line means greater sales.

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Gas Gives Four Major Services in DeLuxe Post-War Home

By
Fred A. Herr

GAS IS USED for general house heating and air conditioning, water heating, refrigeration, cooking and bathroom space heating in a Postwar House recently opened to public inspection in Los Angeles under the sponsorship of the Fritz B. Burns Organization.

The choice of gas for the four major service requirements in this project assumes added importance to the gas industry because the house represents the cooperative planning effort of many industries and dozens of engineers and designers in the field of construction materials, home designing and furnishing and appliance and equipment manufacture.

Essentially, the house is regarded by its sponsors as a construction and design clinical effort in which they have attempted to bring into the focus of public attention the best developments which architects, builders, manufacturers, decorators and planners have to offer.

The completed project, located at Wilshire Boulevard and Highland Avenue, Hollywood, incorporates numerous ideas assembled on a nationwide tour made by Joseph H. Schulte, research director of the Burns Research Division, during which he sought the most advanced postwar products and design ideas, many of them still in the drawing-board stage when he examined them.

Into the final plans of the house were incorporated the ideas, products and materials of more than one hundred manufacturers who offered the Burns Organization their fullest cooperation.

Gas For Heating and Cooking

For heating the main rooms—living room, two bedrooms and sitting room—of the seven-room house the choice was gas, with the heated air from a central gas-fired furnace distributed to the rooms through a duct system. Gas was also the choice of fuel for wall heaters in the two bathrooms, for a special type console refrigerator in the kitchen, for a standard design refrigerator in the patio and for an outdoor range and barbecue broiler.

The house consists of a combination living room-dining room, master bedroom, children's bedroom, an all-purpose room, kitchen and two bathrooms.

The plan gives all major rooms except the second bedroom and second bathroom a full view of a landscaped patio with swimming pool and barbecue area at the rear of the house.

With year-round air conditioning made possible through a combination heating and cooling installation, the architects produced a design incorporating permanently sealed dual Thermopane windows.

The main heating and water heating equipment is installed in a machinery room off the kitchen at the rear of the house. The equipment in this chamber consists of a Precipitron for preliminary cleansing of the air before it enters the heating and cooling unit; a Chrysler Airtemp unit; and a gas water heater.

Gas Fueled Furnace

The heating equipment of the Chrysler Airtemp is in the form of a gas-fueled furnace identified by the designers, The Cooling and Refrigerating Co. of Los Angeles, as a G-70. The refrigeration unit used in conjunction with the dual installation for summer air conditioning is a 3-SCD electric motor powered cooling unit.

The gas fueled furnace is equipped with Minneapolis-Honeywell Moduflow thermostat controls. This arrangement permits the gas flame in the furnace to be controlled to a height commensurate to the variations in outside temperatures, an important factor, the designers claim, in providing an even temperature range in the various rooms.

70,000 B.T.U. Gas Heater

The installation is a Chrysler Airtemp packaged air conditioner for summer use combined with an automatic forced air gas furnace for winter heating purposes, using a single duct system, blower and filter installation for both purposes.

Size figures for the system are as follows:

Heating unit, capacity 70,000 B.t.u. per hour.

Food Preparation Center—shows rear burner gas range, hydraulic dishwasher and the console type refrigerator on the right.

Cooling capacity, 36,000 B.t.u. per hour.

Total air distribution, 1,500 C.F.M. (500 C.F.M. fresh air, 1,000 C.F.M. recirculated.)

The air is carried to the various rooms through a system of galvanized iron ducts, insulated with a layer of two inches of spun-glass. The supply ducts run along the attic space above the house. In each room (kitchen excepted) a branch duct is carried down between the studding to a discharge grille in the sidewall just under the ceiling. A ceiling-mounted discharge outlet is used in the kitchen.

Two Gas Hot Water Heating Centers

The house is equipped with hot water from two separate water heating centers. These centers are located at opposite ends of the house, the size of the heater being based on the estimated amount of water used in the respective areas of hot water demand. This individualized water heating arrangement was decided upon to make possible the use of shorter water pipes and a consequent minimization of heat loss which long pipes create.

One water heater, installed in the machinery room adjacent to the Airtemp heater, provides the hot water needs of the kitchen and second bathroom. The other heater is installed in a ventilated closet just outside the main bathroom. Each heater is of 30-gallon capacity and has a reheating capacity of 49 gallons per hour.

The gas water heater sizing chart prepared in the summer of 1945 by the Water Heater Council of the Pacific Coast Gas Association was used as the basis for determining the hot water needs of the Postwar House.

The association's chart recommends a minimum storage capacity of 40 gallons for water heater equipment in a house with two bedrooms and two bathrooms, into which classification the Postwar House falls. The sponsors of the house, however, considerably exceeded those minimum recommendations by providing a total of 60 gallons of water heater capacity in the form of two 30 gallon heaters.

This decision, to some extent, was predicated on the unusually large number of water-using appliances in the kitchen—a complete laundering setup, dish-washer, garbage disposal unit, refrigerator, sink etc—which, it was believed, would warrant exceeding the recommended minimum requirements in order to assure ample hot water supplies at all times.

Panelray Bathroom Heaters

Both bathrooms are gas heated. Since the heating installation in the master and the auxiliary bathroom are identical, a description of the unit in the larger one will cover both installations. The unit is a full-length infra-red panel heater, known under the trade name "Panelray," and approved by the American Gas Association. Both units were manufactured by the Day & Night Manufacturing Co., Monrovia, Calif. In the master bathroom the Panelray heater is installed in the north wall, facing the unique pear-shaped bath tub with its revolving turret-type Plexiglas shower door that can be drawn across the tub to partition the wide end into a shower compartment.

The panel heater measures five feet in height, 13 inches in width. The Day & Night Manufacturing Co. pointed out to this reporter that the heater is designed to heat the body, not the room air, and that its size and location are intended to permit the heated air to radiate the full length of the body. With the lower end of its heat radiating column being some 18 inches above the floor, the unit is arranged to flood the bathroom with heat to the full height of an average person.

The two heaters in the bathrooms are 10 WP models, designed for a 10,000 B.t.u. input. The vent openings in the header measure 2⅛x5⅝ inch.

Postwar Gas Range

Two of the major appliances in the ultra-modern kitchen are gas fueled. Both incorporate principles of a near-revolutionary character in design and construction that have made them feature attractions to visitors.

The range and refrigerator are installed opposite each other in the U-shaped food preparation area of the kitchen.

The gas range was designed along special lines to make possible the presentation of the latest development in gas cooking facilities when the house was opened to public inspection this spring. The range is the product of Western Stove Co., Inc., Culver City, Calif.

The intriguing design of the kitchen and the entire house is matched by the revolutionary advancement of the gas range. The range contains four all-porcelain enamel top burners in line at the back of the stove, leaving a work space in front, obviating the necessity of reaching over any one burner to prepare food on another, and serving an important new purpose in that this arrangement makes possible the use of a vent above the range for removing heat, fumes and vapors emanating from top-stove cooking.

Another feature that wins the approval of mothers of small children when it is pointed out is that the rear burner arrangement eliminates the danger of children injuring themselves by reaching up and pulling a hot pot from the stove.

Disc Top Solid Burners

The top burners are equipped with saucepan size disc tops. This new principle in burner design was developed at the gas appliance testing laboratory operated at Los Angeles by Southern California Gas Co. and Southern Counties Gas Co.

The range is equipped with a three-speed valve which permits the housewife to turn each burner to a constant specified heat of high, medium or low, as well as the various degrees of heat intensity between those given speeds.

The range has a high automatic pull-out broiler on the same level as the oven, which is completely removable for cleaning, and fully automatic lighting with safety pilots for both broiler and oven.

The top surface of the range curves into a back panel flush with the kitchen wall, then up to the underside of a food and dish cabinet which is mounted on the wall above the range.

Cooking odors and fumes are withdrawn through a duct concealed in the cabinet above the range. The suction fan is immediately above in the attic. The venting system embodies a grease filter to collect the grease and prevent the duct and fan from becoming clogged.

Console Gas Refrigerator

Refrigeration engineers of the Southern California Gas Co. and Servel, Inc., joined efforts in devising a refrigerator that would offer something new and serviceable in home food preservation facilities. In their pre-design deliberations they attempted to consolidate in an experimental model gas refrigerator many of the thoughts and ideas which had been put forth theretofore only as intangible and possibly practical suggestions.

The installation of the Servel refrigerator in its present form illustrates how effectively the gas industry joined with other industries in

making available to the sponsors of the house ideas on postwar appliance design which had not yet reached the full development stage.

The model on view is entirely experimental, installed for the purpose of obtaining a measure of public reaction to its somewhat unorthodox design and construction.

The gas refrigerator is of the type to which the name "console" has been applied as an identification label. It is mounted within the sink-height food preparation and service counter which extends along the side walls in the southern part of the kitchen. Basically, the Servel might be described as a pull-out drawer

Fig. 1:—The main heating system for heating and cooling. Before the incoming air reaches the cooling and heating unit, it is cleansed in the Preciptron (right). The heated air is distributed to the four main rooms of the house through a duct system in the ceiling and discharged through grilles in the rooms.

Fig. 2:—The appliance which attracts the most attention from women visitors is the Servel gas refrigerator. The model shown here is the Console type, embodying two pull-down and two pull-out food storage drawers. The view into the open drawer shows how the freezing unit is installed, still leaving substantial storage area. The storage drawer is high enough to permit a quart milk carton to be placed upright, with space above for a slide-out removable shelf on which to place smaller items.

Fig. 3:—The relation of the position of the gas-fired Panelray wall heater to the rest of the master bathroom may be seen in this photograph. The heater (visible in oblong mirror) is mounted in the wall (left), just this side of the circular mirror.

Fig. 4:—The master bathroom and the second bathroom are heated with infra-red panel heaters of the type shown in the insert, which are designed to radiate heat the full length of the body.

Fig. 5:—Gas is used for a three-fold purpose in the outdoor dining area which forms the Barbecue Center. The young lady stands before a custom-built gas oven for outdoor cooking. The oven is equipped with two rear-mounted gas top-burners for quick coffee-making. To the right of the oven is the barbecue pit which has a charcoal broiler equipped with a gas igniter below the charcoal pan. The fireplace also has a gas igniter.

type to distinguish it from the side-door opening conventional upright type.

Four-Drawer Servel

The entire refrigerator occupies an area 32½ inches high (conventional sink height) by five feet wide. The interior is composed of four drawers. The two upper drawers, slightly larger than the lower ones, have hinges at the bottom of the doors, and handles with which the doors may be lowered. (See figure 2.) The two lower drawers pull outward like ordinary drawers.

The experimental nature of this refrigerator is emphasized by the type of refrigeration unit used. Two Servel units of the type usually found in apartment-house Servels are installed in the upper drawers, one unit in the right drawer, the other in the left. To accommodate the cooling units and still provide space for food storage, the upper drawers have been made about one-third larger. The sponsors of the house point out that the various drawers are high and wide enough to accommodate practically any bottle, package or vessel that can be stored in an upright Servel.

Housewifely criticism from women visitors to the Postwar House seems to center on the fact that too much stooping is involved in getting at the drawers. This is a matter which the designers have promised to amend in a console unit to be designed later which will incorporate the meritorious suggestions made by visitors.

Gas Fueled Barbecue Center

Gas also figures prominently in outdoor refrigeration and cooking appliances installed in a barbecue center in the patio just outside the kitchen.

A small Servel gas refrigerator is installed as part of the service counter equipment at the end of the outdoor sink and food preparation area. It is a conventional hinged-door Servel, except that its height has been accommodated to fit snugly into the service counter. The food storage compartment measures 24x26 inches, minus the area occupied by an ice cube freezing unit.

At the opposite side of the rock-walled, trellise topped barbecue center is a custom-built gas oven with two gas top-burners above. The charcoal broiler in the barbecue pit is equipped with a gas igniter mounted below the charcoal pan. Similarly equipped with a gas igniter is a flagstone fireplace built into the natural stone wall at the western end of the barbecue center.

California Gas Companies Hosts to School Board

Southern California Gas Co. and Southern Counties Gas Co. of Los Angeles on May 23 served as joint hosts to the members of the Los Angeles Board of Education and the home economics teachers of the Los Angeles School System at a dinner in the basement of the firms' headquarters building.

The occasion marked the tenth annual dinner meeting at which the gas companies have been hosts to the school board and its home economics teachers for mutual exchange of ideas.

In addition to the president and members of the Board of Education, there were present 125 home economics teachers and various supervisors of home service and home making education of junior and senior high schools.

The program was prepared by the Home Service Departments of the gas firms, including Katherine Rathbone, home service supervisor of Southern Counties, and Gladys Price, supervisor, and Mercedes Bates, assistant supervisor of home service, for Southern California Gas Co.

Clyde H. Potter, manager, appliance sales, Southern Counties Gas Co., was master of ceremonies.

F. M. Banks, vice president, Southern California Gas Co., welcomed the guests and presented a review of the home service activities of that company. Miss Price followed with a review of the cooperative activities of the gas industry and the Los Angeles school system. A talk on the modern gas utility home economics activities and the accomplishment of the gas industry in that respect in Southern California was given by Miss Bates.

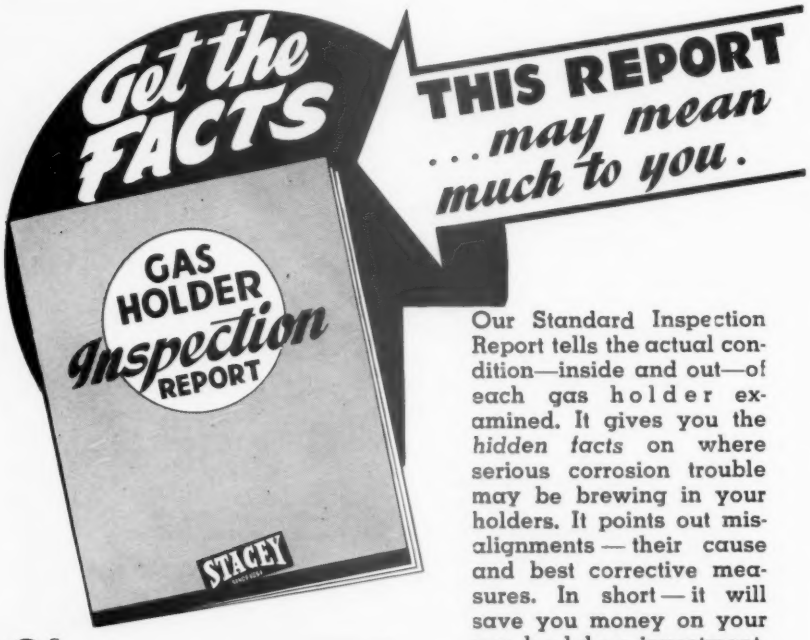
The response was made by Dr. Verling Kersey, superintendent of schools who expressed the appreciation of the educators for the work done by the two gas companies in collaborating to assist the home economics programs of the schools.

In another May home service feature, Southern California Gas Co. served as guest director for one day on the *Los Angeles Times* "College of Cookery."

Miss Chris Anderson of the gas company's home service department, appeared on the platform as guest instructor at the invitation of Marion Manners, *Times* home economist, while Harry Booth of the gas company's sales department, served as master of ceremonies at the microphone.

The program featured a study of how to get the most out of kitchen appliances, mainly the gas range and refrigerator. The program also featured oven and broiler meals, which Miss Anderson prepared to illustrate her lecture. Several complete menus were prepared to show how oven and broiler cookery saves time and fuel.

The cooked foods and recipes were distributed among the women in the audience.



THIS REPORT ...may mean much to you.

Our Standard Inspection Report tells the actual condition—inside and out—of each gas holder examined. It gives you the *hidden facts* on where serious corrosion trouble may be brewing in your holders. It points out misalignments — their cause and best corrective measures. In short — it will save you money on your gas holder investment. Let us give you the facts.

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GAS HOLDERS • HI-PRESSURE TANKS • PURIFIER BOXES
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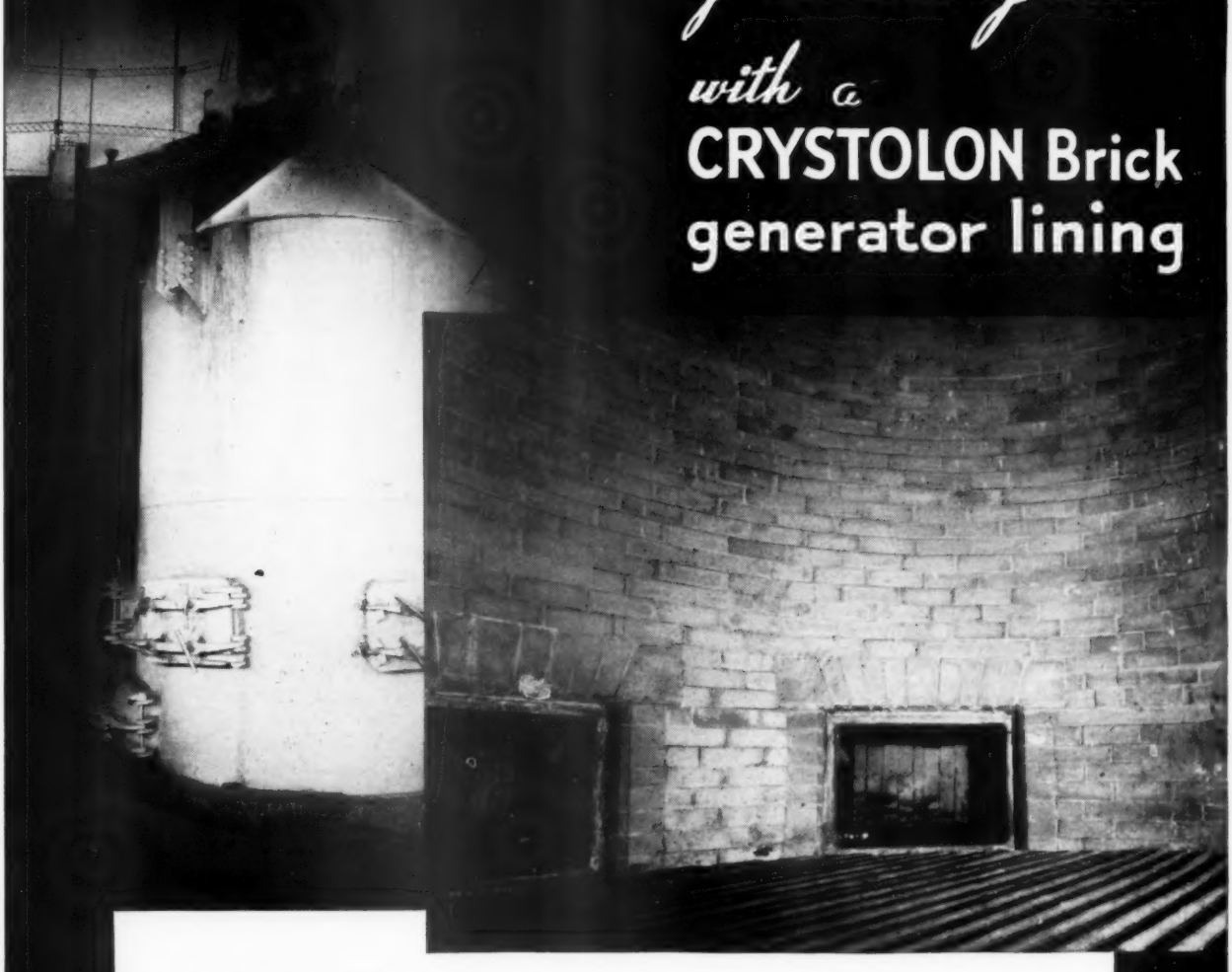
An Independent Organization Not Affiliated With Any Other Builders of Gas Holders

OVER 22,000 HOURS *of actual gas-making time with a* CRYSTOLON Brick generator lining



"The CRYSTOLON Brick in our generator are still in service after more than four years of operation which included 22,362 hours of actual gas-making time, and we expect to operate this set for many months yet."

That is what a production superintendent wrote us. CRYSTOLON (silicon carbide) Brick are highly refractory, chemically stable and physically rugged. They resist slag penetration, thus reducing clinker removal time sufficiently for a lining often to pay for itself the first year.

NORTON COMPANY — Worcester 6, Mass.

Norton Longer Lasting **Refractories**

Meeting, Advisory Council and Executive Committee Southern Gas Assn.

The Advisory Council, made up of representatives from each of the Southern Gas Association member companies, and the Executive Committee, consisting of the officers, directors, and past presidents, met in Dallas on June 10th, to determine the Association's operating objectives.

The gas industry, during this period of rising prices, is faced with the problem of increased operating expenses resulting from the present inflationary trend being paid from revenues based on pre-war prices for gas. Increased sales of gas alone will not rectify this situation and decreased operating expenses are a necessity if the economic stability of the gas industry is to be continued. Quality of service must be maintained and any reduction of operating expenses can only result from more efficient operating methods. With these thoughts in mind, the objectives of the Association were determined.

These objectives are as follows:

1. The Association shall prepare to supply to member companies through its office such statistics as to operating results as member companies are willing to thus make available. By this means, comparisons may be made by one member company with the results accomplished by others. Thus any member company interested in the subject of operating costs may be able to pursue, by means of direct contact, a further study as to the methods followed by others.

2. The Association shall plan for conferences of employees to be held on a sectional basis. Employees attending such conferences shall be at the level of those directly responsible for various phases of operating results. The purpose of such conferences shall be to afford a free exchange of information as to methods and accomplishments of all member companies in order that each member company representative may be able to gain knowledge which will be of practical value to his company.

Committee chairmen were instructed to carry on their activities in accordance with these objectives. The committee chairmen for the current year are:

Accident Prevention: Robert M. Hutchison, Houston Natural Gas Corp., Houston.

Accounting — F. F. McMullen, United Gas Corporation, Houston.

Home Service — Julia Hunter, Lone Star Gas Company, Dallas.

Industrial and Commercial—D. D. Beach, Atlanta Gas Light Co., Atlanta.

Operating — F. L. Carmichall, Lone Star Gas Co., Ft. Worth.

Sales—C. H. Horne, Alabama Gas Co., Birmingham.

Program Committee — 1947 Convention — M. H. North, Oklahoma Natural Gas Co., Tulsa.

Those attending the joint meeting also considered a proposed short course in gas technology to be offered by the Texas College of Arts and Industries at Kingsville, Texas. Dr. Frank H. Dotterweich, chairman of the Engineering Department of the College, invited the Association to sponsor the short course. All the facilities of the college, including dormitories and eating facilities, would be made available. Dr. Dotterweich proposed the three-day course include both technical and non-technical subject matter. Suggested subjects included air-conditioning, odorization, thermostatic controls, service regulation, dehydration, and instrumentation.

The Executive Committee voted to sponsor the suggested short course and cooperate with Dr. Dotterweich and the Texas College of Arts and Industries in arranging for a time and for an acceptable course of study. In the very near future, President Dean A. Strickland will appoint a special committee to work with Dr. Dotterweich to give further consideration and attention to the establishment of the short course in gas technology.

Those attending the meeting unanimously approved the future establishment of a transmission committee in order that the S.G.A. may serve those in the gas industry in the South and Southwest primarily concerned with the problems of transmission. The Membership Committee was directed to study the problem of transmission company membership and participation in the Association activities.

The meeting concluded with a discussion of how the Association through its various committees can best serve the member companies. Committee chairmen were instructed to give careful consideration to the geographical location of meetings and conferences.

Seated left to right: W. H. Ligon, Vice-President; Dean A. Strickland, President; Julia Hunter, Home Service, Dallas; W. L. Woodward, Vice-President.

Standing left to right: F. L. Carmichall, Operating, Ft. Worth; C. L. Horn, Sales, Birmingham; M. H. North, Convention, Tulsa; R. M. Hutchison, Accident Prevention, Houston; F. F. McMullen, Accounting, Houston.

Bartlett Rejoins Cooper-Bessemer Corp.

R. F. (Ted) Bartlett, Jr., has rejoined the staff of the Dallas office of The Cooper-Bessemer Corporation as Sales Engineer, following five years of service in the Army, A. A. Burrell, branch manager, has announced.

Mr. Bartlett was a staff member of the Dallas office from September, 1934, until March, 1941, when he was called to service as a Lieutenant in the Reserve Corps. He served with the 137th Ordnance Maintenance Battalion of the 16th Armored Division and attained the rank of Lieutenant Colonel in the Ordnance Department.

DEVELOPMENTS

IN

GAS PLANT EQUIPMENT

UNITED ENGINEERS & CONSTRUCTORS INC
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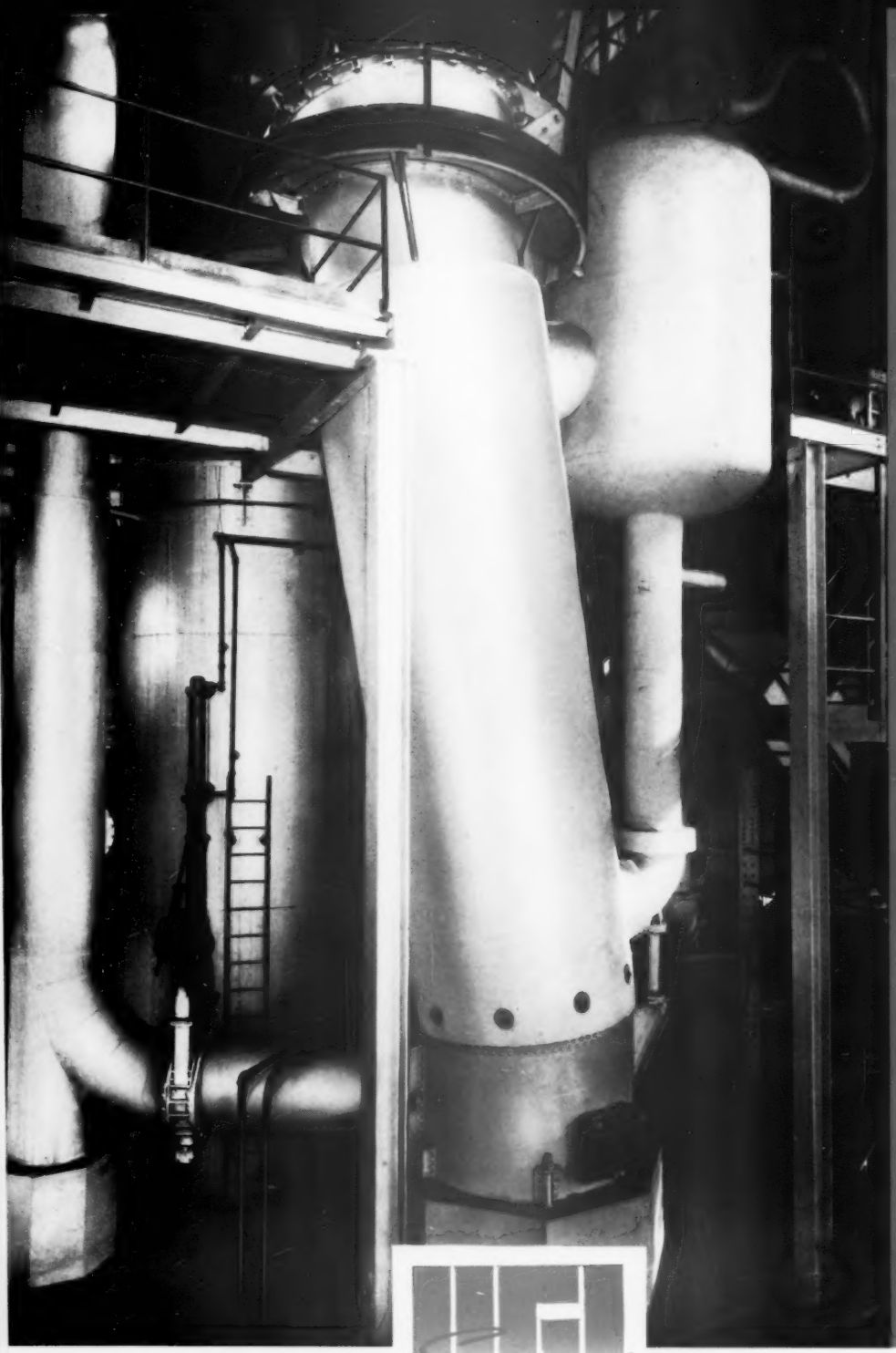

SAVES 25% OF THE BOILER FUEL REQUIRED IN A WATER-GAS PLANT

•

INCREASES THERMAL EFFICIENCY OF PROCESS BY ABOUT 4%

UGI Equipment

THE WASTE HEAT BOILER

By recovering, in the form of high pressure steam for plant use, the heat of waste gases which would otherwise be lost in the atmosphere, the Waste Heat Boiler saves as much as 25% of the fuel required in a water-gas plant. Installation of a Waste Heat Boiler provides for additional boiler capacity in the plant, saves labor in fuel-handling and maintenance, and increases the thermal efficiency of the water-gas process by about 4%. Its design and application to carburetted water-gas sets was a typical UGI development, and to date over 200 have been installed in gas plants in this country and South America.

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WITH A BACKGROUND OF OVER SIXTY YEARS' EXPERIENCE

Gas Holder Heating at Two New England Plants

Experience and Equipment at Adams, Mass. and at Portland, Maine

District Holder Heating Plant

By
A. A. Putnam
Gas Superintendent
Northern Berkshire Gas Company
North Adams, Mass.

IN 1944, with accumulated experiences of nineteen years' operation at this station, emphasized strongly by a few critical periods during which auxiliary equipment had to be rushed to the holder to remove ice formations, it was decided to provide this district holder with a new heater building and plant. The new building was erected, providing three times the floor space of the old heater house. Much of the old equipment was transferred to the new building, and additional equipment was installed to provide duplicate units and to increase heating and pumping capacities.

We now have three gas-fired steam boilers, with a total in-put capacity of about 965,000 B.T.U. per hour. These boilers may be operated separately, or in battery, to supply steam to either of two four-pass straight tube heat exchangers. Each of these heaters is rated to raise 1800 gallons of water per hour from 38° F. to 78° F. The holder water is circulated by either of two 5 horsepower motor-driven centrifugal pumps, each rated to handle 30 gallons per minute at a 174 foot head.

In a holder heating plant of this type, some safety devices and alarm signals are a necessity. Fouling of the impellers on the centrifugal pumps reduces the amount of water handled and the pressure at which it is discharged. To assist in insuring against this condition, twin strainers were installed in the suction line at the pumps. Further protection was provided on this suction line by installing an automatic by-pass around these strainers. The automatic feature of this by-pass is provided by a weighted check valve, which opens when the strainers become clogged to such an extent that the loss in suction head through them overbalances the weighted check, forcing it open and allowing water to flow to the pumps through the by-pass. Failure of electric power to the motors would, of course, stop all water circulation in the holder piping, and allow this piping to freeze up in a very short time. To safeguard this exposed piping against this possibility, a solenoid operated water valve is provided. This solenoid valve is held in a closed position as long as it is energized, but it drops open as soon as the energizing current is interrupted, thereby admitting town water to maintain the circulation in the water lines and preventing them from freezing. The signal lights over the roof are retained to provide indication of power failure, and the cooperation of the Police Department is enjoyed in that we are notified by the officer on the beat in the vicinity of the holder any time the lights are not burning. The gas steam boilers are protected in operation by automatic low water cut-offs, pressure limit controls and thermostatic pilots.

Operation of this plant through the past two winters has demonstrated to our satisfaction that we now have ample capacity to care for our holder heating requirements through any winter temperature extremes that we have reason to expect. We have maintained our holder water temperature during near zero weather with about 60% of our boiler capacity in operation.

Gas consumption has been about 25,000 cubic feet per day during severest weather. Electric power consumption is, of course, steady, regardless of weather extremes, and runs about 90 kilowatt hours per day.

The start of our holder heating season is usually about the middle of November, at which time the holder water temperature is about 45° F. From then on, until the middle of March, boiler capacity in operation is varied manually according to weather and temperature requirements. Our appliance service man in the town of Adams is responsible for the operation of the plant and checks conditions at least once each day. Strainers and burners are cleaned several times each season. Pumps, boilers and heat exchanger tubes are cleaned once each year.

Automatic Heating of a 1500 M., 3 Lift Gas Holder

By
D. R. Campbell
Plant Superintendent
Portland Gas Light Company

TWO gas fired boilers, each rated at 2,200,000 B.T.U. per hour input are installed. Only one boiler is used at a time, the other serving as a spare, and, of course, being available for additional heat, should a long period of extremely cold weather ever require simultaneous operation of two boilers. The active boiler is controlled by a thermostat submerged in the water of the top cup on the coldest side, placed directly behind one of the cup jets. The thermostat is set to cut the boiler in when the top cup water temperature falls to 33° F. and to cut the boiler out again when this temperature has been raised to 37° F. The two boilers are manifolded so that either or both may supply steam to:

One horizontal tubular heat exchanger, rated to transmit 3,500,000 B.T.U. per hour to the circulating water, with steam supplied at 10 lbs. pressure. This heat exchanger is mounted above the boilers and is piped in such a way that condensate runs back to the boilers by gravity. An air valve is supplied to permit the escape of any air from the steam chamber. A recording thermometer is installed to give a continuous record of the temperature of the water leaving the heat exchanger.

One 10 HP motor driven centrifugal pump, rated at 100 gallons per minute against a 190 ft. head, takes water through a 4-inch insu-

lated steel line from a point about half way down the holder tank, and delivers this water through the heat exchanger to the holder circulating system. A mercurial thermometer is installed in the pump suction, and a pressure gauge in the pump discharge. This pump is automatically controlled by an atmospheric thermostat set to keep the pump in operation when the outside temperature is 34° F. or lower. It is manifolded with:

One city gas engine driven centrifugal pump of the same rated capacity. This second pump serves as a standby for the motor driven pump and is manually operated. It was installed primarily for protection in case of electric power failure. The common discharge of the two pumps passes through a check valve against flow-back from the:

Holder circulating piping is arranged as follows:

A 2½" insulated steel line runs from the heat exchanger to a point about 4 feet above the tank walk, where it connects with a 1½" insulated steel header completely encircling the holder, outside the guide frame. From this header are piped jets as follows:

To the tank:

10 jets, equally spaced, and set horizontally, 4 inches below the normal surface of the tank water.

4 jets, equally spaced, and set horizontally about 4 inches above the bottom of the holder tank. These bottom jets are required for the control of anchor ice.

To the cups:

3 jets each, equally spaced, and set inclined slightly downward, the nozzle tips being 1½" below the surface of the water. They are placed near the surface to prevent loss of too much cup water from syphoning action when the pump shuts down. The downward inclination eliminates splashing and improves cup circulation.

Each tank jet is separately valved, and supplied through a ¾" pipe. Each cup jet is separately valved, and supplied through ¾" pipe and a ¾" rubber steam hose loop of sufficient length for full range of lift travel. All jets are placed tangentially in the same rotational direction, of course. This arrangement results in satisfactory circulation of both cup and tank water.

The jet nozzles are made up of ⅛" brass pipe, 4" long, some standard and some extra heavy. In order to balance the system with respect to the volume of water delivered at each jet, it was necessary, by a trial and error procedure, to determine which nozzles should be restricted in flow by the use of extra heavy nozzles. In general, the nozzles nearer the pump are of extra heavy pipe.

Low temperature alarm: To give warning of failure of the equipment to function automatically, there is installed in the bottom cup a second thermostat which closes a storage battery alarm bell circuit if the water in this cup falls to 32° F. It happens that adjacent to our holder we own a two family house which is occupied by the families of two of our employees. Arrangements have been made with them to notify the plant by phone if this alarm bell should ring.

City water standby.

For protection in the event of failure of the complete heating and circulating pump system, a city water connection is provided so that city water may be supplied to the holder piping. City water in Portland never drops below 37° F. A sufficient volume of water at this temperature should prevent ice formation until the regular equipment could be gotten back on the line.

Operation: It will be noted that although we are running pretty close to the edge on temperatures, we are still fairly well protected. The circulating pump operates when atmospheric temperature is 34° F. or lower, therefore, there is little chance of freezing in the piping system. The boiler cuts in when the water in the most exposed location (top cup, north side) drops to 33° F. A temperature rise across the heat exchanger of 12° to 15° F is produced very rapidly after the boiler cuts in, so that there is little chance for freezing to take place in either the cups or tank.

We are depending on the proper and immediate functioning of automatic equipment, however, so for protection over and above the low temperature alarm, we make an inspection of the entire installation the first thing every morning:

Each jet in the cups and tank is checked for possible stoppage, and all lines and hose are checked for leaking.

The chart of the recording thermometer on the outlet of the heat exchanger is changed. This chart gives a complete picture of the operation of the equipment for the past 24 hours.

The temperature of the circulating pump inlet water is taken and recorded. This represents the temperature of the water half-way down the tank. This temperature levels off in late winter at about 35° or 36° F. this affording adequate protection against anchor ice.

Atmospheric temperature is taken and recorded. If this reading is 34° F. or below, the *pump* should be running.

Temperature of the water in the top cup is taken and recorded. If this temperature is 33° F. or lower, the *boiler* should be operating.

Pump delivery pressure is taken and recorded. Any marked variation in this pressure indicates trouble somewhere in the system.

Boiler water level is checked.

The gas meter is read and recorded.

Holder height and pressure is read and recorded.

Once a week the standby gas engine pump is operated to be sure it will start readily in an emergency.

In extremely cold weather another check on the operation of the pumps and boiler is made in the late afternoon.

Gas Consumption at 525 BTU:—Average annual gas consumption on this installation from January 1st 1940 to December 31st 1945 has been 2,570,000 cubic feet. An average of the hourly atmospheric temperatures in Portland for the months of January, February, and December during the same period has been 22° F. Minimum temperatures during this period have been as low as minus 39° F.

Electric power consumption:

Power consumption for the same period is estimated to have been 27,300 KWH per year.

From papers presented at Operating Division meeting of The New England Gas Association in Providence, R. I., May 22, 1946.

Bureau of Mines Report on Solid Fuels

Released May 31st as the tenth in a series of annual reports on the Bureau of Mines coal research and technological program, Information Circular 7352, "Annual Report of Research and Technologic Work on Coal for the Fiscal Year 1945," reviews the accomplishments of Bureau engineers and scientists in coal sampling and analysis, mining and exploration, explosives testing and research, coal preparation and storage, fuel efficiency, and production of synthetic liquid fuels.

A copy of the report, by A. C. Fieldner, Chief of the Fuels and Explosives Branch and Coal Division, and R. E. Brewer, Chemical Engineer, Coal Carbonization Section, Fuels and Explosives Branch, may be obtained by writing the Bureau of Mines, Department of the Interior, Washington 25, D. C.

LP Gases—
Plant And Distribution Practice

By
E. G. Boyer,
Manager, Gas Department
Philadelphia Electric Company
Philadelphia, Pa.

Edward G. Boyer

THE WORD "Practice" in the title of this paper is construed to mean "the methods of using LP gases, without any particular reference to the theory of LP gas behavior." The subject will be treated generally, with particular reference to the actual "practice" developed at the West Conshohocken Plant of the Philadelphia Electric Company during the past winter.

Distribution Practice

For peak load shaving, the LP gas can be added either at the production plants or at some strategic point or points in the distribution system. The ideal place for adding LP gas to the distribution system is at or near the ends of the distribution mains. Adding the LP gas at these points saves transmission and distribution main capacity and investment and allows the normal base gas to be used closer to the production plants. Somewhat lower pumping pressures can be carried at the main plants because the base gas does not have to be pumped so far.

Usually, the LP gas supplied in this manner is 100 percent interchangeable with the base gas, as when it is used to replace natural gas, so that during peak loads the LP gas can be fed into the mains in varying proportions up to entire replacement of the base gas without affecting the satisfactory performance of the customers' appliances.

However, LP gas-air mixtures are not always 100 percent interchangeable with the gas normally supplied to the territory. This is the case of the Philadelphia Electric Company. In this event, for LP gas to augment the supply at peak periods, means a plant equipped with some automatic mixing device so that the amount of LP gas fed into the system will not exceed a certain predetermined percentage of the normal gas. The determination of this percentage requires much study and much experimentation and is not something that can be done haphazardly.

These outlying "peak load" plants are required to function only when heavy load conditions demand, and this may be at any time during the day or night. They may operate a number of times each day, or they may not operate once in a week. Therefore, for reasons of economy, it is not always possible or feasible to have these plants attended; so, wherever possible, they should be fully automatic, and as simple as possible.

The simplest plant is that one which supplies undiluted LP gas. When the conditions require the LP gas to be mixed with air, the problem becomes more involved; and when the conditions require that LP gas-air must be mixed only in definite proportions with the base gas, the problem becomes complicated. Of course, there are systems of controls which will operate satisfactorily, and do their job; but all automatic equipment is subject to failure, and the more automatic equipment there is the more likelihood there is of failure. A failure of automatic mixing equipment in an unattended plant can cause much distribution trouble and customer dissatisfaction. Especially is this true where the LP gas or LP gas-air mixture is not 100 percent interchangeable with the base gas, where, for example, the equipment might fail and supply 100 percent LP gas-air into a system where only 25 percent is permitted.

Assume that LP gas is to be added to the entire gas sendout at the main production plant in varying amounts up to the maximum percentage allowed. Thus, if this gas, which has LP gas in it, reaches the territory where an outlying peak load plant is located, and in which the equipment is set to deliver LP gas in a certain percentage of the gas coming into the plant, the operation of that control equipment to its maximum production will give a street gas which contains much more LP gas than it should, and the customers will receive unsatisfactory service.

Therefore, considering the various factors which enter into the operation of an outlying LP gas plant to augment peak load supplies, it is my opinion that unless the LP gas supplied by that outlying plant is 100 percent interchangeable with the normal gas, the entire addition of LP gas should take place at the main production plant.

This problem has concerned the Philadelphia Electric Company because the estimates for the gas to be sent out to our customers during the next five years show that in 1950 there will be a 66 percent increase over what was sent out in 1945, principally because our residential space heating sales will be increased by 221 percent, in addition to other normal increases. This also means that the gas to be produced at one of our plants will be 3829 percent of that produced there in 1945, and on the maximum day the total gas produced and purchased will increase 296 percent, or 68,700 MCF. All of this increase must be supplied by new production facilities. This means a large plant, and we are proceeding with an economic study for its future location, equipment and erection.

The base load gas will be supplied by standard, proven methods of gas production. For the most part, all gas needed over and above this base will be furnished by LP gas in diluted or undiluted form, as the case may require. It is estimated that on the maximum day of 1950 this will amount to about 39,750 MCF of LP

gas-air. This figure does not include the LP gas that will be used for cold enriching, or for reforming in our sets. This, too, will be a sizeable quantity.

The use of LP gas to bolster weak spots in distribution systems has been time tested by many companies and has its definite advantages when used correctly. I can only say that each company must study its own problem and arrive at the best solution for its own case. For the case of the Philadelphia Electric Company, we have concluded that for the next five years at least, LP gases will serve us best at our main production plants.

Production Plant Practice

The usage of LP gases at principal production plants is advantageous because usually at those plants there is:

(a) Adequate labor for handling the LP gas and unloading it from tank cars or trucks into storage.

(b) Adequate and competent personnel to keep close watch on the operation of the controls and safety devices, and to make instant correction to any part which is not functioning correctly.

(c) Competent personnel to watch the performance of the gas in the test burners and to note instantly any tendency toward unsatisfactory appliance performance.

(d) Another advantage of using LP gas at the plant for enriching has the effect of increasing the capacity of the transmission and distribution main systems. To interchange correctly with the normal gas, a gas, having a specific gravity higher than that of the normal gas, must also have a Btu content higher than that of the normal gas in order to offset the effect of that higher specific gravity. These higher Btu's require fewer cubic feet of gas to be sent out to supply the same total Btu to the customers, and the effect is to increase the effective capacity of the transmission and distribution system. In many instances this is a very definite advantage on peak days.

In general, LP gases can be used to advantage in production plants in three main ways:

(a) Reforming them in standard water gas machines by passing them through the hot fuel bed.

No time will be spent here in describing anything technical about the use of LP gases by such methods, but for those desiring the theory and operation I can suggest reference to my paper given before the New England Gas Association in June 1945 entitled, "The Utilization of Hydrocarbon Gases in the Production and Distribution of Manufactured Gas." (Printed in full in the October 1945 issue of *American Gas Journal*.) It is sufficient to say that this method of using LP gases has proven perfectly satisfactory.

(b) Using undiluted LP gases for cold enriching to any desired Btu, any other gas that is deficient in Btu.

(c) For the production of LP gas-air mixtures, primarily for the purpose of increasing the production capacity of the main plant.

The last two methods, and particularly (c), are the more common ways of using LP gases. They are the two methods now in use at our West Conshohocken Plant and which eventually will be installed in our Chester Plant.

For the next winter for base load operation, we are planning to use at the West Conshohocken Gas Plant an average quantity of about 25,000 gallons of LP gas per day. This will be used in a reforming apparatus on the carburetted water gas sets, for cold enriching of manufactured gas and purchased gas, and for the production of LP gas-air mixtures to increase the production capacity of the plant; and on maximum days we may use as much as 95,000 gallons of LP gas per day. This is nearly the capacity of ten standard tank cars.

The storage capacity is planned to be 150,000 gallons which may be increased to 200,000 gallons to insure adequate reserve capacity for the loads that are anticipated. The tanks are "propane" tanks and are suitable for storing whatever LP gas is available from the refineries during the winter.

LP Gas Installation at West Conshohocken Plant

During this past winter an LP gas installation was made at our West Conshohocken Plant. Figure I is a diagrammatic sketch of the system. At the present time the system is entirely manually controlled, but it will be fully automatic after the necessary equipment has been received and installed. Some of this equipment is shown on the sketch.

The LP gas is received in tank cars and is unloaded into the storage tanks shown at the lower left-hand corner of Figure I. From the tank the liquid is forced, under pressure, to the vaporizer where steam is admitted and the LP gas is vaporized to about 45 pounds per square inch gauge pressure. From the vaporizer the LP vapor can be used in either or both of the following jobs:

(a) **Cold Enriching** — The bulk of our gas at West Conshohocken is purchased coke oven gas, and its flow is shown on the diagram as the "Purchased Gas Line" at the upper left-hand corner of Figure I, and shows the gas passing through the purchased gas meter. This gas as received is at about 530 Btu, and to bring this down to 520 (which is our standard distribution requirement), air is added from the blowers, and passes through the air meter and joins the purchased gas flow. Until this LP gas was available very little air could be added before the final Btu of the mixture was reduced to 520. With this LP gas available, much more air is added for the purpose of aiding our dry box purification, and instead of the previous one or two percent of air, we are able to add from six to nine percent air. Of course this much air lowers the Btu's below the 520 Btu standard, so the gas is enriched back to 520 with the LP gas. This system has been in continuous operation now for about six weeks and is working very satisfactorily.

At the present time the controlling of the mixture is done manually because the Calorimixer has not yet been installed. A calorimeter is being used to show the results of the manual operation. Eventually the control will be by the calorimeter and Calorimixer and the automatic control valve; all of which are shown in Figure I, just below the "purifying boxes."

At the same time, the LP gas can be used for enriching the gas made on the water gas machines. The per hour when washing 50 racks or made gas from exhaustion flows through the "made gas line," then through the meter, and joins the flow of the combined purchased gas and air diluent to the boxes. The combined flow is enriched to the desired Btu by the same connection mentioned for the purchased gas enrichment.

(b) **Production of LP Gas - Air Mixtures**—The other way in which the LP gas is used is for the production of LP gas-air mixtures of various Btu's. This system is shown at the right center of the sketch. Figure I shows how the liquid LP gas flows to the vaporizer, where it is vaporized at a pressure of 45 pounds per square inch. The vapor goes to the "jet compressors" where it is mixed with air in the required proportion, and enters the stream of other gases going to the storage holder.

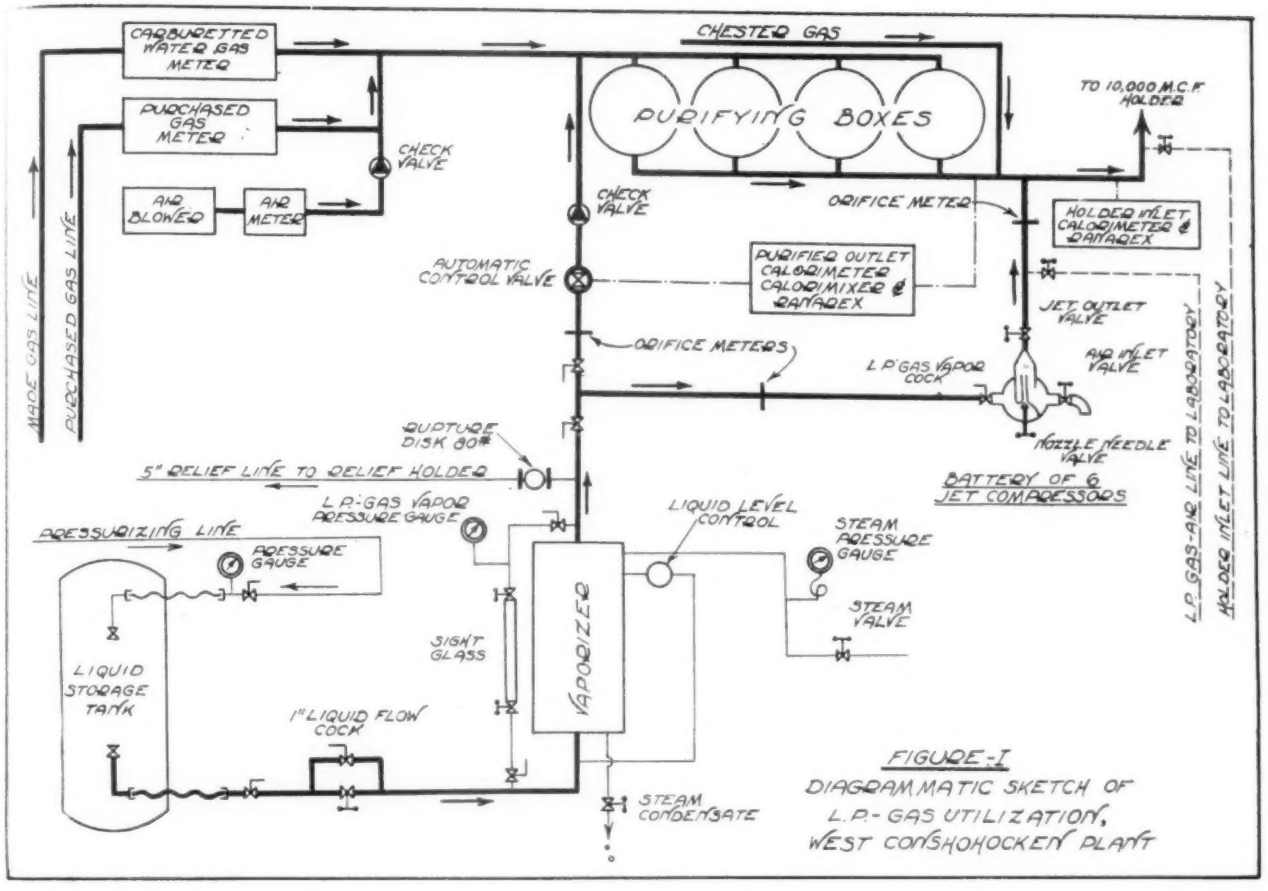


FIGURE-I
DIAGRAMMATIC SKETCH OF L.P.-GAS UTILIZATION, WEST CONSHOHOCKEN PLANT

A battery of "jet compressors" is used, having four four-inch jets, with a capacity of 25 MCF per hour each, and two six-inch jets, with a capacity of 60 MCF per hour each, giving a total capacity of 220 MCF per hour, or over 5,000 MCF per day for the entire battery at about 600 Btu per cubic foot of LP gas-air mixture. Later there will be added one eight-inch jet and one ten-inch jet, which will raise the capacity of the battery to about 12,000 MCF per day.

Operating Practice

In our system the customers' appliances are adjusted for two different specific gravities. Approximately half the territory receives what we call "high gravity gas," which is a reformed refinery oil gas with a specific gravity of 0.70. The other half of our territory receives what we call "low gravity gas," which has a specific gravity of about 0.450, or less. This "low gravity" area is the territory supplied by the West Conshohocken Plant and is low gravity because practically all the gas is purchased coke oven gas. It is into this low gravity area that the mixed gas containing LP gas is supplied.

On days when a large sendout is required the final street gas may be a mixture of quite a number of separate gases, and may include purchased coke oven gas, carburetted water gas, reformed refinery oil gas, and LP gas-air mixtures or undiluted LP gas vapor. There is no way of controlling exactly the percent of each of the possible gases in the final gas. The mixture is more or less variable, depending upon general conditions of the entire system, which govern how much of each gas is taken into the plant or produced on the plant's own sets at various times of the day. This constantly varying mixture makes it difficult, if not impossible, to arrive at the correct percentages of each gas to give satisfactory interchangeability in the customers' appliances. If it were possible to supply just coke oven gas and LP gas-air mixtures the maximum percentage of LP gas-air that could be added could be definitely determined, but when there are so many gases constantly changing in proportion it is almost a physical impossibility to follow any predetermined curve of allowable percentages of each gas.

Much work has been done by the industry on studying the factors that make for good interchangeability of a substitute gas for the base gas. The formulas entail much calculation, and are rather cumbersome to handle in the day to day operation of the gas plant. Their application depends upon having complete analysis of the various gases, and not all gas plants are equipped with either the apparatus or the manpower to make continuous analyses of gas samples. It is my opinion that the A.G.A. formulas are excellent for a study of all phases of interchangeability and for the laying of plans for future operation and economies, but after having worked with this problem for the past heating season I believe the A.G.A. formula is too cumbersome for actual day to day operation, or for more than an occasional check.

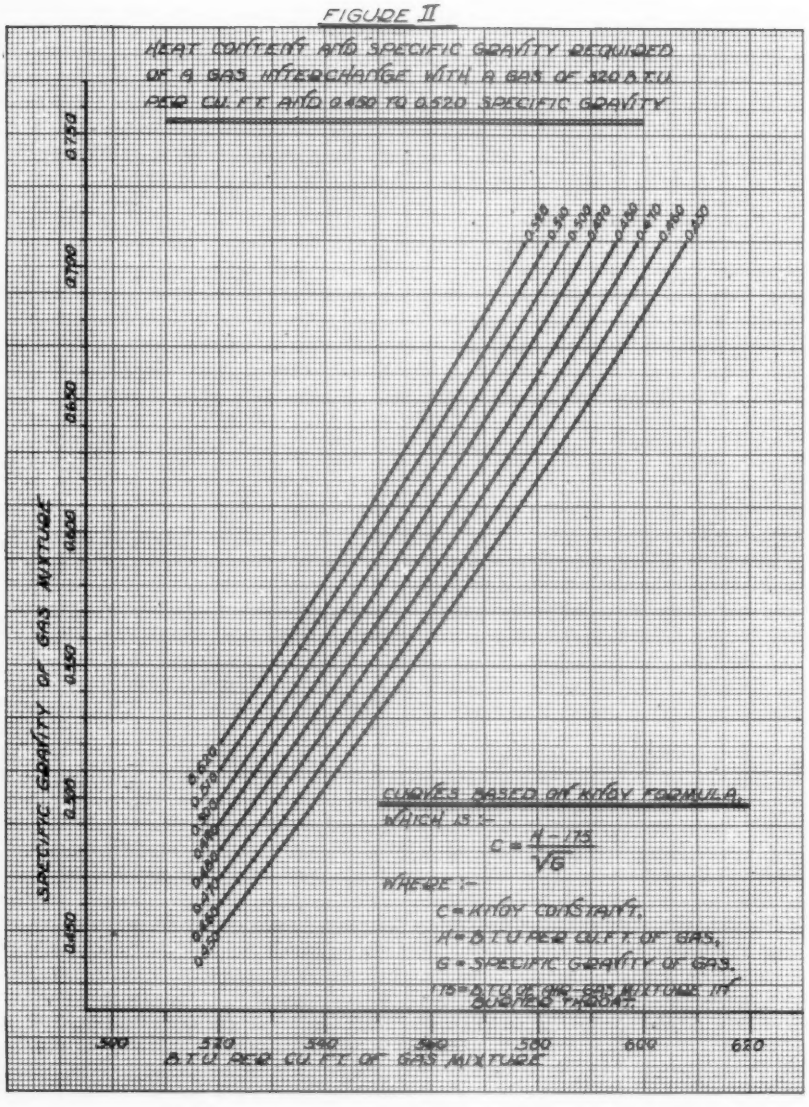
Therefore something more easily applied to day to day operation had to be found, and the formula devised by Mr. Knoy has been found very practical for guiding the operation at our West Conshohocken gas plant.

Mr. Knoy's formula is

$$C = \frac{H - 175}{\sqrt{G}}$$

in which H is the Btu per cubic foot of gas, G is its specific gravity, and

FIGURE II



C is a constant. This formula states that if two gases are to be interchangeable they must have the same value of C; so, if the specific gravity increases, the Btu's of the gas must increase so that C remains constant.

Figure 2 is a reproduction of the curves used in actual operation at our West Conshohocken gas plant. The numbers shown at the ends of each curve represent the specific gravity for which the appliances in the territory are assumed to be adjusted when the gas is at the standard of 520 Btu per cubic feet. The gas replacing the standard gas must satisfy the conditions as shown by these curves .

According to the Knoy formula, the ratio between the heating value and the square root of the specific gravity of a particular gas is always a constant and any gas replacing it must have the same value of constant. The curves are plotted from theoretical calculations so that each point on any one curve satisfies the Knoy equation for the respective base gas.

In the practical application of these curves, the Btu of the total mixture of all gases going to the storage holder is determined and controlled.

For the best interchange performance the interchanging gas should be according to the 0.450 curve of Figure 2. However, maximum allowable variations in performance permit us to run on a somewhat leaner curve.

In actual operation with our base gas alone, we have found that unsatisfactory appliance performance begins when the specific gravity approaches 0.520. Between 0.450 and 0.520 there is a specific gravity which is satisfactory for emergency service, or at about 0.480.

When it became necessary to use LP gas-air mixtures last winter, our problem was to determine on which one of the specific gravity curves (Figure 2) we should operate. There is quite a difference between the final Btu required by the different curves, and each extra Btu means added cost. For instance, referring to Figure 2, assuming the specific gravity of the gas entering the holder is 0.600, the Btu according to the 0.450 curve should be 573 to give the best performance to the customers. However, if the interchange is according to the 0.480 curve, the Btu required is only 561, or 12 Btu's per cubic foot less than according to the 0.450 curve. If interchange is according to the 0.520 curve, the Btu required is only 543, or 30 Btu less than according to the 0.450 curve.

Accordingly, it was decided to operate on the "medium performance" curve of 0.480. When performance on this curve proved to be satisfactory we went to the 0.490 curve. When performance remained good, we boosted to the 0.500 curve. At this point the flames on the appliances began to be somewhat hard, and it was decided to drop back to the 0.48 curve; and this is the one on which we usually operate.

Table 1 shows sample operating figures from a few days operation. Part "A" is of days during which the purchased coke oven gas was normal, and 2400 MCF of LP gas-air were being made per day. Columns 7 and 8 show the days' average Btu and specific gravity of the gas sent out, and Column 9 is the curve on which we operated on that particular day. This is found by plotting on Figure 2 the values in Columns 7 and 8, and Column 9 represents the curve nearest their intersecting point. These days were near the beginning of our operating experience, and although we tried to operate on the 0.48 curve, actual operation averaged on the 0.450 curve.

Part "B" shows the operation for the week of May 8 to 12. During this time, the coal strike was on and the operation of the coke ovens was curtailed to save coal; so the quantity of coke oven gas received by us was down to about one-third and less, of the normal quantity. To replace this deficiency, large quantities of reformed refinery oil gas had to be taken in from the plant at Chester.

Without LP gas enrichment, the specific gravity of the gas sent out would have been well over the 0.52 limit allowed; as for instance, the

TABLE I
OPERATION AT THE WEST CONSHOHOCKEN GAS PLANT, USING LP GAS FOR ENRICHING AND PRODUCING GAS-AIR MIXTURES, ON DAYS WITH NORMAL AND CURTAILED FLOWS OF PURCHASED COKE OVEN GAS

Line	Date	Purchased Gas MCF	Diluent Added MCF	Reformed Oil Gas from Chester MCF	LP Gas: Cold Enriching MCF	LP Gas: LP Gas-Air (at Btu shown in Col. 10) MCF	Total Gas: To Storage Holder MCF	Total Gas: Btu	Total Gas: Specific Gravity	Curve of Interchange on Fig. IV	LP Gas-Air Btu Produced
1	Column No.	1	2	3	4	5	6	7	8	9	10
2	A - Operation with Purchased Coke Oven Gas at Normal Rate										
3	Feb. 11, 1946										
4	Total	17,628	287	2,500	-	2,400	22,825	548	0.590	0.450	795 (a)
5	% of Total	77.2%	1.3%	11.0%	-	10.5%	100.0%				
6	Feb. 12, 1946										
7	Total	17,970	265	1,596	-	2,400	22,231	552	0.535	0.450	805 (a)
8	% of Total	80.8%	1.2%	7.2%	-	10.8%	100.0%				
9	Feb. 13, 1946										
10	Total	18,597	316	1,442	-	2,175	22,530	538	0.512	0.460	637 (a)
11	% of Total	82.5%	1.4%	6.4%	-	9.7%	100.0%				
12	Note (a) - Btu of Column 7 controlled by varying the Btu of the LP Gas-Air produced on the Jet Compressors.										
13	B - Curtailed Purchased Coke Oven Gas										
14	May 8, 1946										
15	Total	6,472	442	7,863	385	375	15,537	577	0.646	0.480	600 (b)
16	% of Total	41.7%	2.8%	50.6%	2.5%	2.4%	100.0%				
17	May 9, 1946										
18	Total	5,473	396	7,371	366	600	14,206	580	0.655	0.480	600 (b)
19	% of Total	38.5%	2.8%	51.9%	2.6%	4.2%	100.0%				
20	May 10, 1946										
21	Total	4,629	366	7,110	368	600	13,073	588	0.671	0.470	600 (b)
22	% of Total	35.4%	2.8%	54.4%	2.8%	4.6%	100.0%				
23	May 11, 1946										
24	Total	4,697	311	4,142	234	592	9,976	580	0.647	0.470	600 (b)
25	% of Total	47.2%	3.1%	41.5%	2.3%	5.9%	100.0%				
26	May 12, 1946										
27	Total	4,878	319	4,153	245	600	10,195	573	0.644	0.470	600 (b)
28	% of Total	47.9%	3.1%	40.7%	2.4%	5.9%	100.0%				
29	Note (b) Btu of Column 7 controlled by the enriching LP Gas. The Btu of the LP Gas-Air were set and kept approximately constant.										

mixture for May 8 would have given a sendout specific gravity of nearly 0.580. If this gas had gone out into our mains, appliance performance would have been very poor. With the LP gas equipment, plant operation was according to the figures shown in Columns 7, 8 and 9, and customers received satisfactory service. It is also worthwhile noting that actual operation was supposed to be according to the 0.48 curve, and Column 9 shows that is exactly what was averaged for the day. During all of the operation, the burner number averaged about 290. The lowest number was 285, and many were around 295. At no time was the burner number under the minimum 283.

A careful check was made with the Distribution Department to determine actual performance on the customers' premises and the over-all operation was indeed very satisfactory. Additional service calls were practically negligible and all in all the customers received satisfactory performance.

Table 1 also shows the use of the two methods of Btu control as described previously; that is, in February, Btu control was obtained on the jet compressors, while in May the Btu's were controlled by cold enriching.

All in all, our plant practice in using LP gas has proven very satisfactory in maintaining good appliance performance, and the curves based upon the Knoy formula have proven themselves excellent guides to satisfactory interchangeability characteristics of our replacing gas.

Presented at Joint Production and Chemical Conference A.G.A., New York, June 3-5, 1946.

Reports on Gas Production in German Industries

Among the reports made by technical investigators for the Combined Intelligence Objectives Sub-Committee and released on May 16th by the Office of the Publication Board, Department of Commerce, are the following:

PB-6648 describes the operation of a gas and Diesel oil producing plant at Bohlen. The plant used the hydrogenation process to produce gas and oil from brown coal tar. Diagrams, flowsheets, and production figures for the year 1936-1939 are included in the report (photostat, $3; microfilm, 50 cents; 41 pages).

PB-6650 is a detailed survey of the production of fuels and lubricants at the I. G. Farbenindustrie works at Leuna. Gas production, ammonia synthesis, hydrogenation, catalytic cracking, synthetic oils, aviation fuels, carboxylic acids, and other products and processes are described in the report (photostat, $14; microfilm, $2.50; 209 pages).

PB-7745 describes German methods for toluene production and the synthesis of hydrocarbons from water gas. Miscellaneous manufacturing processes and products, including oxidation, chlorination, and polymerization and condensation processes, are also discussed. This report is based on interviews with German experts at I. G. Farben plants at Ludwigshafen and Oppau (photostat, $3; microfilm, 50 cents; 40 pages).

Orders for the reports should be addressed to the Office of the Publication Board, Department of Commerce, and should be accompanied by check or money order, payable to the Treasurer of the United States.

Vollbrecht Elected Director Penn Indus. Inst. Co.

Penn Industrial Instrument Corporation, 3116 No. 17th St., Philadelphia 32, Pa., announces the election of J. T. Vollbrecht as a director. Mr. Vollbrecht is president of the Energy Control Co. Inc. of Philadelphia and New York.

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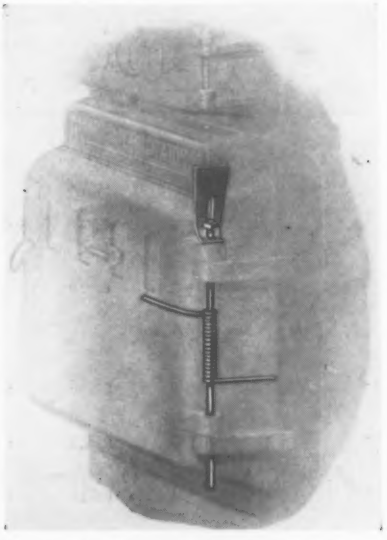
OVER **50,000** IN USE



This device, designed for conversion burners, automatically closes the fire door of a boiler or furnace when blown open.

It consists of a cadmium plated door hinge pin, spring and wedge. The hinge pin replaces the regular fire door pins, the spring furnishes the motive power and the slotted wedge holds the fire door in the open position when required.

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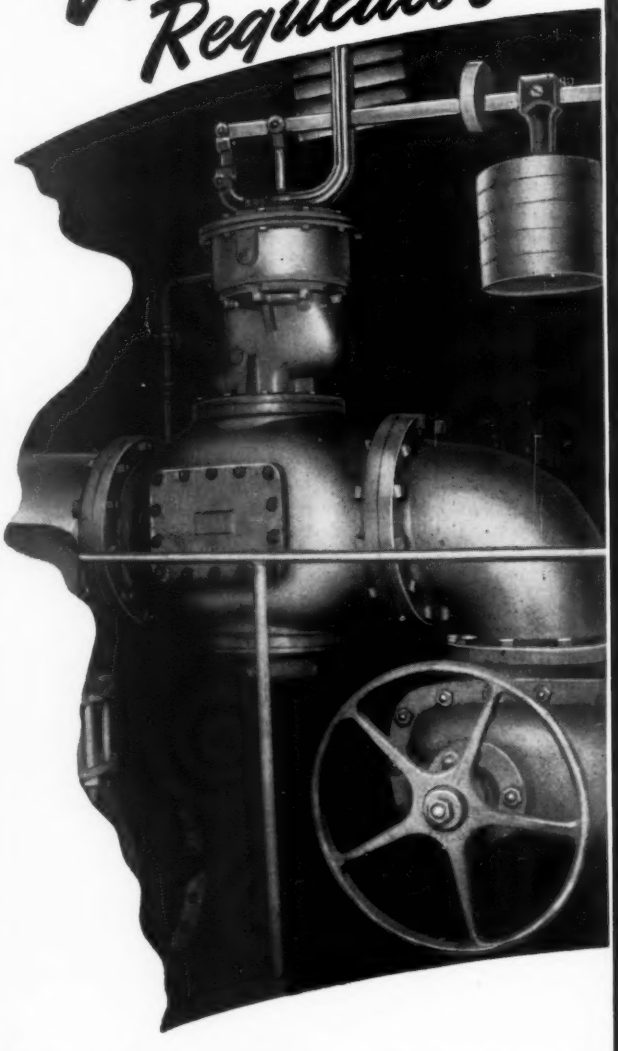

★ Reynolds KT Series Versatile Regulator is manufactured in a range of sizes from 2" to 12". It will reduce pressure to inches W. C.—or pounds to pounds. This Regulator can be used where space is limited, making it impossible to use the auxiliary bowl. In addition, Reynolds builds High Pressure Line Regulators with auxiliary bowl, when complete lockup is required. Let Reynolds adapt their new Versatile Regulator to your Gas Control System.

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Unattended Holder Station at Easthampton, Massachusetts

Automatic Pressure Control and Holder Heating Systems

By
Philip G. Facey
Supt. Northampton Gas Light Co.

THE Northampton Gas Light Company of Northampton, Massachusetts, pumps approximately 3,000 MCF of water gas monthly to a 150 MCF, two-lift unattended storage holder located approximately 5 miles away in the Town of Easthampton, Massachusetts.

Our entire high pressure system is supplied by an Ingersol-Rand cross compound compressor, maintaining 22 lbs. maximum and 5 lbs. minimum pressure, changed manually to meet public requirements as determined from past load demands.

Control equipment at the pumping station is a recording pressure gauge and a lubricated plug cock used for throttling.

Gas for our unattended holder is bled from our 4" high pressure main and delivered to the holder through automatic controls.

A control house at the holder contains a four inch relief valve in the transmission line, which is opened and closed through the medium of wire ropes, weights, a weight cage and sheaves. At the holder, attached to the tank cat-walk, is a bracket, one end of which serves as a point of fulcrum for two levers, to which wire ropes and weights are connected. A combination of two levers is used instead of one to provide a flexible connection, allowing the holder to rise due to expansion caused by heat of the sun after the relief valve closes. Figure 1 illustrates the construction of the bracket.

One wire rope spans a distance of 40 feet between the holder and control house where it enters and runs through sheaves to the weighted cage.

The construction of the weighted cage is shown in Figure 2. It consists of two round steel plates ¼" x 12" O.D. attached to the ends of three steel rods approximately 5 feet long. An intermediate plate has 3-⅜" iron pipes spaced and welded to it so as to slide on the three main rods of the cage. Weights are placed on the bottom plate of the cage to keep the connecting wire rope taut. Additional weights are placed on the intermediate plate to close and hold the relief valve closed through a wire rope connection to the relief valve lever. An eyebolt is located in the center of the top plate to which the wire rope from the levers at the holder is connected.

The operation of this equipment is as follows:

As the storage holder lowers, a wire rope attached at the cup dam sheet lowers a weighted lever, fulcrumed at one end. This lever makes contact with a second lever, giving sufficient leverage to lift the weighted cage located in the control house, opening the relief valve which allows gas to feed into the holder. To prevent fouling of the cable attached to the dam sheet, when the bottom lift of the holder lowers to its landing blocks, a ring is attached at approximately one-half its length and to this another cable is connected, the opposite end of which is fastened to the holder column.

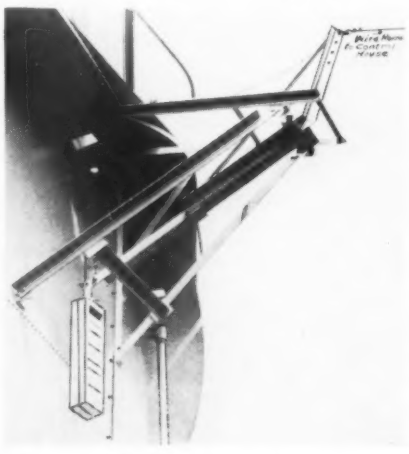


Figure 1. Bracket attached to catwalk on the holder.

When the holder fills ,the cage lowers and in so doing transfers the load of the weights on the intermediate plate to the relief valve lever, stopping the flow of gas to the storage holder.

A master diaphragm bowl, actuated by the high pressure gas, is connected to the relief valve lever. This may be weighted to prevent the relief valve from opening to feed the holder during peak loads in the high pressure system, so as to maintain a minimum pressure in the transmission main.

Because of the partially opened cock in the transmission main at the pumping station, the closing of the relief valve causes the transmission line pressure to increase to that of the main at the pumping station. Likewise, when the relief valve is open, the transmission line pressure will be less than that of the main at the pumping station. By comparison of the pressures on each side of the partially opened cock in the transmission main, we can determine at the pumping station whether or not the relief valve at the storage holder is open to feed gas. Additional protection as to the proper operation of the equipment is through observation by employees when in the holder area. Normally the height of this holder will not vary more than six to twelve inches, and a decided change would require checking to determine whether it was caused by an increased load or faulty equipment.

Holder Heating

The holder heating system is entirely automatic and the equipment used is as follows:

Two Peerless Super Section, Number C11S25 gas fired boilers com-

(Concluded on page 60)

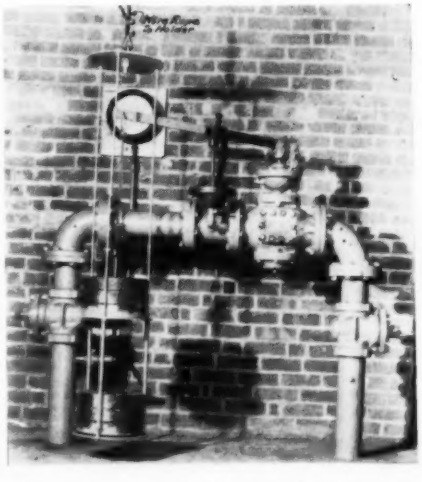
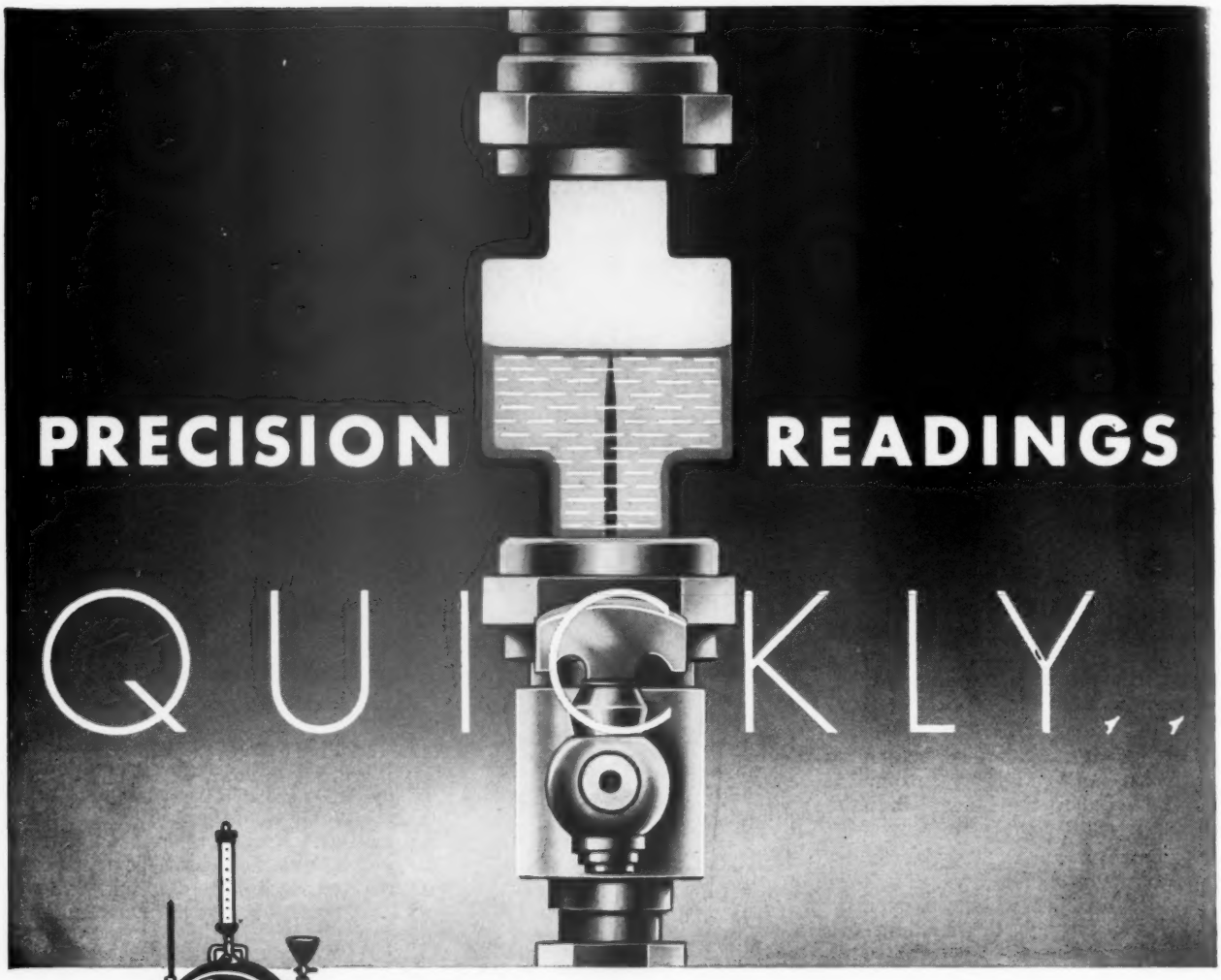


Figure 2. Control house equipment shows the weighted cage and connection to relief valve.



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By

Malcolm B. Mackay

The Burkay Company

CHAPTER V

Part 1

Mass Feeding Hot Water Demand

SEVERAL Study Programs, — each covering a period of 28 days and embracing establishments serving from 300 to 3400 persons per meal and employing both the Cafeteria and Waiter types of service were conducted. A Sub Water Meter of the recording type, installed in the cold water supply line to the water heating system, was employed to determine not only the total number of gallons of hot water consumed *per meal,* but also the *relative rate* at which the hot water was used during each meal period. A Sub Gas Meter was also installed where gas was employed as fuel for both water heating and cooking, to determine the percentage of total fuel consumption for each purpose.

(1) A daily reading of the main Water Meter served to establish the total number of gallons of water—both hot and cold — consumed *per day* while a daily reading of the Main and Sub Gas Meters served to establish the gas consumption for water heating and for cooking.

(2) A daily reading of the temperature of the cold water supply and a daily check of the number of persons served *per meal* was also recorded.

(3) A daily check—at or near the close of a Period of Peak Demand —was made of the hot water temperature, both of that supplied for general use at, or near, 140° F., and of that supplied for the final rinsing of dishes and other eating utensils during the dishwashing operation at, or above, a temperature of 180° F.

(4) From the above accumulated and recorded information it was possible to compute and establish accurate data covering various phases of hot and cold water and fuel demand as follows:

(a) The number of gallons of hot water required per person per day and per meal and also the fact that the volume of hot water required per person for Dinner (heavy meal) was approximately 14% greater than that required for either Breakfast or Lunch (light meal).

(b) The average number of gallons of hot water consumed per person per meal in establishments supplied with Mechanical Dishwashing facilities was *only* approximately 5% *greater* than was used in those having only Hand Dishwashing facilities where 180° water was used for final rinsing.

(c) The variation in consumption of hot water in places serving only approximately 300 persons *per meal* and in those serving as many as 3400 persons per meal was so slight that it may be ignored when estimating the hot water demand of a specific case, regardless of size. Comparison in this respect was made of establishments employing mechanical dishwashing and of those employing hand dishwashing, as well.

(d) From the water and fuel consumption figures thus revealed, and from the number of persons served per meal it was possible to determine the efficiency of the water heating systems (number of gallons of water raised a specific number of degrees in temperature per unit of fuel) and the number of fuel units required per person—per meal for *both* water heating and cooking purposes.

(5) In addition to establishing the fact that the Hot Water Demand will definitely be 1.31 *gallons per person*—per meal and that this factor will *not vary* more than 14% regardless of the number served or whether mechanical or hand dishwashing facilities are used, the hot water consumption curves plotted from an average of those registered on the daily charts of the sub recording hot water meter also reveal the following additional information covering peak periods and peak hour, hot water demand factors which may likewise be interpreted as a *per person basis*:

(a) The characteristics of the plotted, hot water consumption curves, and the fact that they were practically identical in every instance, confirmed our previously developed theory to the effect that the hot water demand for *each* meal was distributed over 3, clearly defined periods of peak demand, the plotted consumption curves of which also conformed closely to the same pattern. These curves also revealed the fact that the greatest rate of hot water consumption occurred during the dishwashing period beginning approximately 20 minutes after starting the serving of the meal.

(b) The *first,* or *pre-meal peak* of hot water demand occurs during the period of meal preparation and exists for from 2 to two and one half hours. During this interval approximately 27% of the hot water required during the meal period will be consumed.

(c) The *second,* or *Meal Peak* of hot water demand occurs during the dishwashing period and — if the dishwashing facilities are adequate and properly arranged—should exist for *not more* than 1½ hours. During this interval, approximately 55% of the hot water required during the meal period will be consumed, practically *all* of it for dishwashing.

(d) The *third,* and last, or *Post-Meal Peak* of hot water demand occurs during the interval immediately following the dishwashing period

and exists for approximately 1½ hours. During this interval approximately 18% of the hot water required during the meal period will be used for general clean-up of utensils and equipment.

Peak Hour Hot Water Demand

(1) Since a water heating system having sufficient capacity to supply the *maximum demand* for hot water which will occur during the greatest peak hour will always be capable of supplying a *lesser demand* which may occur during any other hour of the day, it is necessary only to provide sufficient capacity in a food service establishment water heating system to supply the peak hot water demand which will occur during the "meal" or dishwashing peak period.

(a) As the *minimum* length of time required for the dishwashing operation is 1½ hours—provided the dishwashing facilities are adequate and properly arranged as defined in paragraph *a.* (5) (c), immediately above—the peak hour demand for hot water will be equivalent to 2/3 of the volume which will be consumed during this hour and a half interval.

(b) The *peak hour demand* for hot water will accordingly be 2/3 of 55% of 1.31 gallons per person—per meal or 0.48 gallon (practically ½ gallon) per person served. For example—the water heating system in a restaurant serving 600 persons per meal *must* have sufficient capacity to supply 600 times ½; or 300 gallons of hot water during the hour of greatest peak demand.

(c) Inadequate facilities or improper arrangement of dishwashing equipment may impede the dishwashing function to the extent that this phase of operation may require more than 1½ hours for accomplishment. The only way in which this extension of time could possibly influence the hot water demand factor would be to *increase* the length of the "meal" or dishwashing period to more than 1½ hours and, consequently, diminish the volume of hot water consumed, per person, during the *peak demand hour* of this period. It will accordingly be apparent that—if this condition exists and the basic, peak demand factor of ½ gallon per person—per peak hour is employed when determining the capacity of the water heating system — the system will be slightly over-capacitated rather than under-capacitated and there will be sufficient reserve capacity to meet the increased demand for hot water which would result from installing adequate dishwashing

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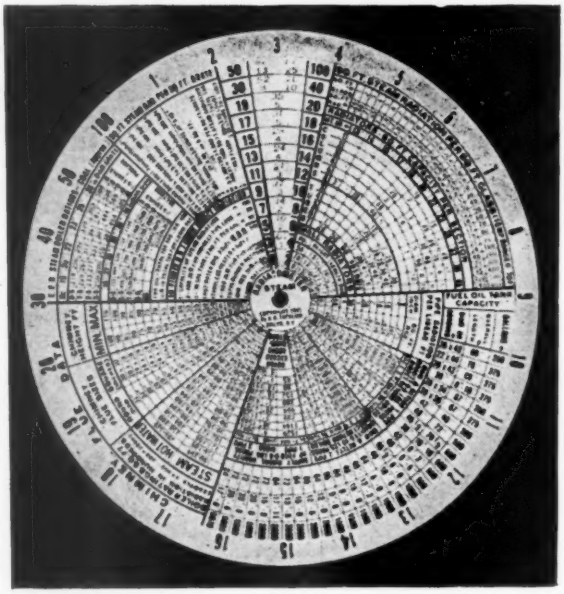

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cilities or improving their arrangement to accomplish more rapid accomplishment of this phase of the work.

Dishwashing Machine Hot Water Demand Characteristics

(1) While the Food Service Establishment peak hour hot water demand factor, above referred to, applies to the *total volume* of hot water which will be required per person—per meal, it does not, however, segregate the demand for hot water for general use at normal temperature of approximately 140° F., and that which will be required at 180° F., to supply the final rinse operation in a spray type dishwasher or manual rinsing.

(a) Approximately 65% of the hot water needed for dishwashing will be required at a temperature of 180° F., or higher, to supply the final rinse function and may be supplied by a recovery type of water heating system in which *all* of the water is heated to 180° F. — by a booster water heater or by a two temperature system as described in Chapter I.

(b) The following data covering the various types of dishwashing machines will assist in promoting a better understanding of the manner in which each type functions and the temperature of hot water which must be provided to conform to the public health requirements of practically every community. Although the charts giving the 180° rinse water requirements of various makes and types of mechanical, spray type dishwashing equipment as published by every dishwashing machine manufacturer, reflect, almost without exception, these requirements, in "gallons of 180° water required per hour," we must recognize the fact that the *rate of flow* of the required 180° rinse water is equally, if not *more important* than the total hourly requirements.

(2) All Spray Type machines come under one of the following classifications:

(a) Single Tank Type—In this type of dishwasher the washing solution is recirculated by a pump and delivered through nozzles above and below the racks of trays containing the dishes. Subsequent to the washing operation in the One Position machine, the 180° rinse, manually controlled, is introduced through independent spray nozzles above and below the dish rack or tray while it is in position above the wash tank.

In the Two Position type of single tank machine the washing solution is likewise re-circulated by a pump and discharged through nozzles above and below the racks or trays of dishes while in position above the wash tank.

The capacity of the single tank, two-position machine exceeds that of the single tank, one-position type. The flow of 180° rinse water is customarily controlled by a trip lever valve which is engaged by the dish rack or tray while in the rinsing position, but the flow may, however, be manually controlled. The movement of the dish racks or trays through this type of machine is accomplished by manually advancing them from the wash to the rinse position and then out of the machine, or by mechanical means which advance the racks through the machine at a rate of speed approximately ten feet per minute after being introduced by the operator.

The 180° water must be available at a minimum rate of flow of 5 gallons per minute in order that the rinse spray from each nozzle may be sufficiently vigorous to thoroughly flush off the residue of washing solution from the dishes or glassware in the normal rinsing interval of from 10 to 15 seconds.

180° Rinse Water Requirement —Single Tank Dishwasher. Based upon a 15 second rinse interval in which the 180° water is supplied at a rate of flow of 6 gallons per minute, it will be apparent that the single tank machine will require approximately 90 gallons of 180° rinse water per hour when washing 60 racks of trays of dishes per hour—75 gallons per hour when washing 50 racks of trays—and 60 gallons of 180° rinse water per hour when washing only 40 racks or trays. The total hourly requirement will be greater if the rinse periods exceed 15 seconds each.

(b) Two Tank Machine—In this type of dishwasher the washing solution in the first tank is likewise recirculated by a pump and is distributed through nozzles above and below the dishrack while it is in position over the first tank. The second tank contains rinse water which is also recirculated by a pump and delivered through nozzles above and below the dish rack or tray when in position above the second or rinse tank. The final rinse water drains into the second or primary rinse tank of the machine and this overflows into the washing solution, constantly refreshing it. A temperature of from 170° to 180° is normally maintained in the primary rinse tank by means of externally applied heat or by an immersion heating element. Final rinse using fresh 180° water is delivered through a single row of rinse nozzles above and below the dish tray or rack.

180° Rinse Water Requirement —Two Tank Dishwasher. Based upon 15 second rinse interval in which the 180° water is supplied at a rate of flow of 4½ gallons per minute it will be apparent that the *hourly* requirement of 180° rinse water for the two tank machine will be approximately as follows:

68 Gallons of 180° rinse water per hour when washing 60 racks or trays.

79 Gallons of 180° rinse water per hour when washing 70 racks or trays.

90 Gallons of 180° rinse water per hour when washing 80 racks or trays.

101 Gallons of 180° rinse water per hour when washing 90 racks or trays.

112 Gallons of 180° rinse water per hour when washing 100 racks or trays.

The total hourly requirement will be greater if the rinse periods exceed 15 seconds each.

(c) Conveyor Type Machine — This type is similar to the two tank machine in that it is provided with a wash tank, a primary rinse tank and a final spray rinse. The washing solution and primary rinse are recirculated by a pump as in the two tank machine and the final rinse is similarly located.

180° Rinse Water Requirement — Conveyor Type Dishwasher. Based upon continuous operation of the conveyor type machine it will be apparent that the total, *hourly* requirement of 180° rinse will be approximately as follows:

270 Gallons per hour when supplied at a rate of flow at 4½ gallons per minute.

260 Gallons per hour when supplied at a rate of flow at 4 gallons per minute.

210 Gallons per hour when supplied at a rate of flow at 3½ gallons per minute.

(d) 180° Rinse Water Requirements—Spray Type Dishwashers. From the above it will be apparent that the prime hot water requirement for *all* spray types of machines is that the rate of flow of 180° rinse water be adequate to supply a vigorous, flushing rinse from the rinse nozzles.

In the single tank type the 180°

(Concluded on page 60)

RECENT COURT DECISIONS
Affecting Gas Utilities

Validity of Gas Accessory Sale Contracts

By
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RECENTLY the higher courts rendered several interesting and informative decisions involving the validity of sale contracts of gas equipment, accessories and appliances. Knowledge of these late and leading higher court cases will be especially helpful to readers who desire to avoid expensive litigation. We shall briefly review these outstanding decisions. It is advisable that readers clip and save these citations for future reference.

First, it is interesting to observe that in January of this year, a higher court (190 S. W. (2d) 135) said:

"The sale of gas or electric appliances is properly incident to a gas or electric utility business, and therefore is not ultra vires, where the utility is incorporated."

Thus, the validity of contracts for sale of merchandise by gas corporations is well established.

Conditional Contracts

A great majority of contracts for sale of gas equipment, accessories and appliances are "conditional" which means that the purchaser has agreed to fulfill certain and well defined obligations, generally relating to payments, before he may assume legal title to the purchased goods.

It is well known that either a properly recorded conditional contract of sale, or a chattel mortgage, gives the seller a first lien on the subject of the sale. Neither a conditional contract of sale nor a chattel mortgage is valid, with respect to innocent parties, unless it is properly and legally recorded.

Contrary to the opinion of a majority of readers a conditional contract of sale or a chattel mortgage recorded in *any* county in *any* state in the United States is valid with respect to *all* persons in the *whole* United States. This rather unusual law may, at first hand, appear impractical and unreasonable, because no seller can search the records in every county in every state in the United States to ascertain whether another seller has a first lien on merchandise. This law originally was designed to protect sellers who are legally required to record conditional contracts of sale and chattel mortgages *only* in the county where the sale was made or in some instances where the merchandise may be installed. See late and leading higher court case of Conway, 41 Pac. (2d) 1049.

Another important point of law is that an unrecorded conditional contract of sale or mortgage is valid with respect only to persons who have *knowledge* of the transaction. Therefore, the sole purpose of recording a sale contract or mortgage is to "legally" inform strangers and innocent persons that the seller retains a first lien on the subject of the sale.

Thus, "mutual knowledge" may be equivalent to a recorded contract or mortgage. This law is applicable to all sale contracts.

For illustration, in Westside Fuel Service, Inc., v. Steiker Company, 45 Atl. (2d) 491, reported March, 1946, the testimony showed that a buyer and seller entered into a contract September 15, 1944, for the purchase and sale of equipment. The purchaser made a down payment of $500. The sale was not consummated because the purchaser could not obtain a permit for the purchase of the equipment from the Office of Defense Transportation. The purchaser sued the seller to recover the down payment, and proved that both the seller and himself had mutual knowledge at the time the contract was made that the buyer must obtain a permit from Office of Defense Transportation for purchase of the truck. Therefore, the higher court held that the seller must return to the buyer the $500 down payment. This court said:

"These regulations were known to both the buyer and the seller and any contract which they made was subject to such regulation . . . When such fact became known to the defendant it was his duty to return the deposit."

Also, see Haley v. Van Lierop, 153 Fed. (2d) 212, reported February, 1946, where a buyer and seller entered into a contract of sale. At the time this contract was made the parties contemplated that the order would be filled by the seller from predetermined source of supply. Substantial evidence showed that the seller received shipment of about fifty per cent of normal quantity. Thus the seller was unable to fulfill the terms of the contract.

The purchaser sued the seller for breach of the contract. The higher court refused to allow the purchaser any damages because the testimony showed that both parties "contemplated" when the contract was made that the seller's delivery depended upon the efficiency and quantity of his source of supply.

Therefore, it is quite apparent that mutual knowledge of both buyer and seller of an important condition, whether such knowledge is constructive or actual, automatically becomes an element of the contract of sale.

Conditional Sale vs Chattel Mortgage

According to modern higher courts when a chattel mortgage becomes past due, the holder of the mortgage has three remedies for realizing upon his security: (1) He may peaceably take possession of the chattel, advertise and sell and apply the proceeds of sale to his secured debt, paying the surplus, if any, to the mortgagor; (2) if possession be refused, he may institute claim and delivery proceedings to get possession of the chattel for the purpose of sale as in the first instance; (3) he may institute a proceeding similar to the foreclosure of a mortgage of real estate.

Except for certain minor differences a conditional sale contract is in legal effect tantamount to a chattel mortgage, and a majority of suits on conditional contracts for simplicity may be considered as if upon chattel mortgages. See, Talbott v. Sandifer, 27 S. C. 624; Perkins v. Bank, 20 S. E. 759; and Hill v. Winnsboro Corporation, 99 S. E. 836.

Marring of Building

Sometimes considerable controversy has resulted where removal of repossessed gas appliances will mar the building. It is important to know that the fact that the removal will slightly mar the building is not positive evidence that the seller cannot repossess the device.

For example, in Reno Electrical Works v. Ward, 274 Pac. 196, it was disclosed that a purchaser of twenty electric fans attached them to the walls of a leased building by brackets. Litigation developed when the landlord objected to removal of the fans because the brackets were nailed and screwed to the walls. However, the court held that fans attached in this manner to a building are not legal fixtures, saying:

"It is true the insulating material was secured to the walls of the building by screws and nails, but not so secured as that the fans and materials can not be removed without injury to the insulation, and also the building."

Also, see Cottonport Bank v. Dunn, 21 So. (2d) 525, reported July, 1945. In this case the testimony showed that gas equipment was installed in a dwelling under a contract by which the property owner agreed to pay down a stated amount and pay the balance in monthly payments. The purchaser defaulted and the question presented the court was whether the seller could repossess the equipment. It was contended by the purchaser that removal of the equipment would damage the house. This court held:

"The mere fact that the gas system thus became an immovable by nature did not necessarily destroy the vendor's lien resting on it at the time of installation. The rule is that where the movable sold has become immovable by nature or by destination and still remains in the hands of the purchaser and can be identified and removed without substantial injury to the structure to which it is attached, the vendor's lien and privilege is still enforceable."

Also, see Wilson, 192 S. W. (2d) 76, where the higher court held that gas stoves could be removed from an apartment building because the owner failed to make agreed payments.

Vendor's Lien

According to a late higher court decision a seller of equipment has a vendor's lien to secure payment of the equipment. However, such a lien does not usually apply to strangers who have no knowledge that the purchaser still owes the seller. Moreover, none but a seller may have a vendor's lien.

For example, in Port v. Lee, 19 So. (2d) 656, reported February, 1945, the testimony showed that a property owner purchased from a gas company certain equipment. The property owner paid the gas company for the equipment, but in order to make this payment he borrowed the necessary money from a bank. The purchaser gave to the bank three notes payable in 35 installments of $9.27. The notes were ordinary notes with no mention of any seller's lien or privilege securing them. Moreover, the purchaser did not grant a chattel mortgage to the bank.

The purchaser defaulted in making the agreed payments and the bank filed suit claiming a vendor's lien on the gas equipment. The higher court refused to hold that the bank had a valid lien, and said:

"The plaintiff (bank) did not have a vendor's lien and privilege on the gas system. The vendor's lien can only be created when a vendor sells an object to a purchaser on a credit basis. The plaintiff was not the seller of the system. It had merely loaned the money to the purchaser to pay the vendor."

Rule of Warranty

Modern higher courts consistently hold that both a buyer and seller are bound by a clause in a contract of sale which specifies that the seller has privilege within a stipulated period of replacing defective merchandise. The fact that the purchaser neglects to immediately examine the merchandise *does* not render the clause void.

For illustration, in Whitaker v. Cannon, 45 Atl. (2d) 120, reported February, 1946, it was shown that a contract of sale contained a clause: "Any complaint must be made in writing within ten days after receipt of the goods by the purchaser. . . ."

On December 17 the seller delivered the merchandise to the purchaser who paid for it in full. The purchaser stored the merchandise, without examination, where they remained for 4 months. The merchandise was then unpacked and the buyer discovered that it was defective.

The purchaser sued the seller for heavy damages. The higher court refused to hold the seller liable, saying that the purchaser should have complained in writing within ten days from date of delivery.

Also, see Kennedy v. Corne Company, 19 N. W. (2d) 51, reported August, 1945, where a purchaser sued a seller to recover heavy damages for defective merchandise.

The seller proved that at the time of the delivery of the merchandise there was attached to it a tag upon which was plainly printed: "Notice, Non-Warranty—We give no warranty, express or implied."

Although the lower court held the purchaser entitled to recover heavy damages from the seller, the higher court reversed this decision.

This court also held that in order for a disclaimer of warranty clause on merchandise container to be valid it is *not* essential that the buyer have actual knowledge of it. In other words, it is sufficient if the clause is printed upon the package containing the merchandise, or upon the invoice, or in the catalogue, so that it *might have* come to attention of the purchaser.

★ ★ ★ ★ ★

Law of Taxation

Elimination of invalid taxation by a gas corporation which sells merchandise is equally as important as earning profits from sales.

Modern higher courts consistently hold that persons who, in the most general sense, may be regarded as pursuing the same occupation, as, for instance, merchants, may thus be divided into classes, and the classes may be taxed in different amounts and according to different standards. Merchants may be divided into wholesalers and retailers, and, if there be reasonable grounds, these may be further divided according to the particular classes of business in which they may engage. The considerations upon which such classifications shall be based are primarily within the discretion of the Legislature. The courts can only interfere with enforcement of taxation laws only when an attempted classification has no reasonable basis in the nature of the businesses classified, and the law operates unequally upon subjects between which there is no real difference to justify the separate treatment of them undertaken by the Legislature. This rule is authorized by both states and federal Constitutions. Moreover, the courts will not approve "double" taxation, nor will a court *imply* that a business is in two classifications and, therefore, subject to two separate tax laws.

(Continued on page 46)

Supreme Court Decision in North American Co. Case

An Analysis of the Decision, which Includes An Outline of the Powers of Congress

By
John Simpson

DOES SECTION 11 (b) (1) of the Public Utility Holding Act of 1935, authorizing the Securities and Exchange Commission to act to bring about the geographic and economic integration of holding company systems fall within the power of Congress to regulate commerce between the States, and does it violate the due process clause of the Fifth Amendment to the Constitution? These were the questions before the United States Supreme Court in North American Co. v. Securities and Exchange Commission, on certiorari from the Second Circuit Court of Appeals, which has rejected the Utility's constitutional objections (133 F. 2d 148). This judgment the Supreme Court affirmed April 1, 1946, in a unanimous opinion, delivered by Justice Murphy. (66 S. Ct. Rep. 785).

"While the ownership of securities, considered separately and abstractly, may not be commerce," the opinion says, "the relationship of such ownership in the contest of public utility holding companies and their subsidiaries to interstate commerce is clear. And the fact that valuable interests may be affected does not, of itself, render invalid, under the due process clause, a determination by Congress that the disadvantages of uninterrupted systems outweigh unintegrated advantages."

There is no destruction of values without just compensation, since the Act sufficiently protects shareholder's interests.

Justice Murphy said that, although North American's lack of intervention in the activities of its subsidiaries resulting from its satisfaction with the local management of these companies made affirmative action by North American unnecessary, it does not follow that North American's domination of its system was any less real or effective. "Domination may spring as readily from subtle or unexercised power as from arbitrary imposition of command."

As the mails and the instrumentalities of interstate commerce are vital to the functioning of this holding company system, without which the holding company would be unable to float the various security issues of its own or of its subsidiaries, thereby selling securities to residents of every State in the nation, and "would be unable to exercise and maintain the influence arising from its large stock holdings, receiving notices and reports, sending proxies to stockholders' meetings, collecting dividends and interest, and transmitting whatever instructions and advice may be necessary."

"Nor could North American retain its other relationships and contacts with its own subsidiaries without the use of the mails and facilities of interstate commerce. Such interstate commercial transactions involve the very essence of North American's business. They enable it to promote the sound development of its investments from its headquarters in New York City. In short, they are commerce which concerns more states than one. As stated by this court in Associated Press V. National Labor Relations Board, 301 U. S. 103, 128, 37 S Ct. 654, 81 L. Ed. 933. 'Interstate communication of a business nature, whatever the means of such communication, is interstate commerce regulable by Congress under the Constitution.'"

In essence, S 11 (b) (1) confines the operation of each holding company system to a single integrated public utility system with provision for the retention of additional systems only if they are relatively small, located close to the single system and unable to operate under separate management without the loss of substantial economies; in addition, other holdings may be retained only if their retention is related to the operations of the retained properties.

The requirements of the section clause apply only to registered holding companies. A holding company, under the utility definition, is a company that controls or possesses a controlling influence over an electric or gas utility company. A company that is a mere investor in utility securities and that does not control or possess a controlling interest over the utility companies need not comply with S 11 (b) (1).

The Commission's power under the "unless and except" clause of S 3 (d) to deny an exemption to a predominant local holding company does not mean that a holding company having no relation whatever to interstate commerce can be subjected to S 11 (b) (1) or to any other provision of the Act. "The Commission, in denying an exemption under this clause, is bound by the policy set forth in S 1 (c) to act so as to eliminate evils connected with holding companies 'engaged in interstate commerce or in activities which directly affect or burden interstate commerce.' A holding company predominantly local in character may nevertheless engage in activities affecting or burdening interstate commerce to the detriment of the public interest or the interests of investors and consumers. Only in such a case could the Commission properly deny an exemption under the 'unless and except' clause." But that problem did not affect the North American, which, like most public utility holding companies, is engaged in interstate commerce directly or through its subsidiaries. "The possibility that the Commission might erroneously fail to exempt some truly local holding company from the provisions of S 11 (b) (1) cannot negative the plain fact that S 11 (b) (1) was designed to apply and does apply to holding companies engaged in interstate commerce. North American is therefore subject to its terms."

"The dominant characteristic of a holding company is the ownership of securities by which it is possible to control or substantially to influence the policies and management of one or more operating companies in a particular field of enterprise. * * * The control arising from this own-

ership of securities also allows such holding companies to exact unreasonable fees, commissions and other charges from their own subsidiaries, to make undue profits from the handling of the issue, sale and exchange of securities for their subsidiaries, to issue unsound securities of their own, based upon the inflated value of the subsidiaries, and to affect adversely the accounting practices and the rate and dividend policies of the subsidiaries. See S 1 (b). Congress has found that all of these various abuses and evils occur and are spread and perpetuated through the mails and the channels of interstate commerce. And Congress has further found that such interstate activities, which grow out of the ownership of operating companies, have caused public utility holding companies to be 'affected with a national public interest.' S 1 (a)."

The ownership of securities of operating companies, the Supreme Court says "is the generating force of the constant interstate flow of reports, letters, equipment, securities, accounts, instructions and money—all of which constitute the life blood of holding companies and allow the numerous abuses to be effectuated. It also makes the interstate transmission of gas and electricity by the subsidiaries, as well as their other interstate actions, reflect upon and magnify the interstate character of the holding companies. Without the factor of stock ownership the very foundation and framework of holding company systems would be gone and the amount of their interstate activity would be at a minimum, centralized management and control of widely scattered utility properties would be difficult, if not impossible."

"Section 11 (b) (1) is concerned with and operates directly upon this ownership of Securities." By this clause "holding companies are compelled to integrate and coordinate their systems and to divest themselves of security holdings of geographically and economically unrelated properties. In this way Congress hoped to rejuvenate local utility management and to restore effective state regulation, both of which had been seriously impaired by the existence and practices of nation-wide holding company systems."

Power of Congress

The Supreme Court has always recognized that the power of Congress over interstate commerce is "the power to regulate; that is, to prescribe the rule by which commerce is to be governed. This power, like all others vested in Congress, is complete in itself, may be exercised to its utmost extent, and acknowledges no limitations, other than are prescribed in the Constitution. Gibbons v. Ogden, 9 Wheat. 196. This is not to say, of course, that Congress is an absolute sovereign. It is limited by express provisions in other parts of the Constitution, such as section 9 of Article 1 and the Bill of Rights. But so far as the commerce clause alone is concerned, Congress has plenary power, a power which extends to every part of interstate commerce, and to every instrumentality and agency by which it is carried on, and the full control by Congress of the subjects committed to its regulation is not to be denied or thwarted by the commingling of interstate and intrastate operations."

"This broad commerce clause does not operate so as to render the nation powerless to defend itself against economic forces that Congress decrees inimical or destructive of the national economy. Rather it is an affirmative power commensurate with the national needs. It is not restricted by contrary state laws or private contracts. And in using this great power Congress is not bound by technical legal conceptions. Commerce itself is an intensely practical matter. Swift & Co. v. United States, 196 U. S. 375, 398. To deal with it effectively Congress must be able to act in terms of economic and financial realities. The commerce clause gives it authority so to act."

" * * * Congress may impose relevant conditions and requirements on those who are the channels of interstate commerce in order that those channels will not become the means of promoting or spreading evil, whether of a physical or economic nature. Brooks v. United States 267 U. S. 432, 436 37 A.L.R. 1407. This power permits congress to attack an evil directly at its source, provided that the evil bears a substantial relationship to interstate commerce. Congress thus has power to make direct assault upon such economic evils as those relating to labor relations. National Labor Relations Board v. Jones & Laughlin Co., 301 U. S. 1, 108 A.L.R. 1352; Polish National Alliance v. National Labor Relations Board, 302 U. S. 643, to wages and hours, United States v. Darby, 312 U. S. 100, to market transactions, Stafford v. Wallace, 258 U. S. 495, 23 A.L.R. 229; Board of Trade of Chicago v. Olsen, 262 U. S. 1, and to monopolistic practices, Northern Securities Co v. United States. The fact that an evil may involve a corporation's financial practices, its business structure or its security portfolio does not detract from the power of Congress under the Commerce Clause to promulgate rules in order to destroy that evil. Once it is established that the evil concerns or affects Congress in more states than one, Congress may act. The framers of the Constitution never intended that the legislative power of the nation should find itself incapable of disposing of a subject matter specifically committed to its charge. In re Rahrer, 140 U. S. 545.

"Congress in S 11 (b) (1) of the Public Utility Holding Act was concerned with the economic evils resulting from uncoordinated and unintegrated public utility holding company systems. These evils were found to be polluting the channels of interstate commerce and to take the form of transactions occurring in and concerning more states than one. Congress also found that the national welfare was thereby harmed, as well as the interests of investors and consumers. These evils, moreover, were traceable in large part to the nature and extent of the securities owned by the holding companies. Congress therefore has power under the commerce clause to attempt to remove those evils by ordering the holding companies to divest themselves of the securities that made such evils possible.

"It follows that North American's contention that the ownership of securities is not in itself interstate commerce and hence may not be made the basis of federal legislation misconceives the issue in this case. Precisely the same misconception was made more than forty years ago by the appellants in Northern Securities Co. v. United States (193 U. S. 197 at pages 334, 335) and was rejected by this Court. Inasmuch as Congress may protect the freedom of interstate commerce by any means that are appropriate and that are lawful and not prohibited by the Constitution, this Court in the Northern Securities Co. case recognized that Congress may deal with and affect the ownership of securities in order to protect the freedom of commerce. Congress likewise has the power in this case.

"In fashioning the remedy decreed by S 11 (b) (1), Congress was following a pattern set many years ago by decisions applying the Sherman Antitrust Act, 15 U. S. C. A. SS 1-7, 15 note, Northern Securities Co. v. United States, supra; Standard Oil Co. v. United States, 221 U. S. 1; Continental Ins. Co. v. United

States, 259 U. S. 156 and the commodities clause of the Hepburn Act, 49 U. S. C. A. S 1 et seq; United States v. Lehigh Valley Railroad 220 U. S. 257; United States v. Delaware, Lackawanna & Western Railroad Co., 238 U. S. 516. In so affecting the corporate structure of holding companies, it was exercising its power to 'foster, protect and control the commerce with appropriate regard to the welfare of those who are immediately concerned as well as the public at large, and to promote its growth and to insure its safety.' Dayton - Goose Creek Railway Co. v. United States, 263 U. S. 456, 478, 35 A.L.R. 472. It is clear, therefore, that S 11 (b) (1) is invulnerable to attack under the commerce clause."

Constitutionality Under the Due Process Clause

The constitutionality of S 11 (b) (1) was also questioned by North American from the standpoint of the due process clause of the Fifth Amendment to the Constitution. It was argued that this section, by compelling it to divest itself of its scattered subsidiaries and to confine its operations to a single integrated system, involves a taking of its property without just compensation. It was also claimed that such evils as were found to exist in public utility holding companies find an adequate remedy in other sections of the Act and that S 11 (b) (1) is therefore appropriate. The Supreme Court holds that neither of these contentions is meritorious.

The utility pointed to the valuable right of North American's shareholders to pool their investments and thereby obtain the benefit alleged to flow from efficient, common management of diversified interests. The Supreme Court, however, says that "Congress balanced the various considerations and concluded that this right is clearly outweighed by the actual and potential damage to the public, the investors and the consumers resulting from the use made of pooled investments. Under such circumstances whatever value this right may have does not foreclose the protection of the various interests which Congress found to be paramount. See North Western Securities Co. v. United States, supra. Nor does the value of North American's contributions as a holding company to the earning power and intrinsic value of the assets divested pursuant to S 11 (b) (1) bar Congress from requiring such divestment. Congress concluded from the extensive studies made prior to the passage of the Act that the economic advantage of a holding company at the top of an unintegrated, sprawling system are not commensurate with the resulting economic disadvantages. The reasonableness of that conclusion is one for Congress to determine. The fact that valuable interests may be affected does not, by itself, render invalid under the due process clause the determination made by Congress.

"Moreover, there is no basis here for assuming that in limiting the scope of North American's operations, there will be dispositions of securities for inadequate considerations, thereby raising a question as to whether there is a destruction of these values without just compensation.

"Finally, the section is held constitutional as to North American even should it not be engaged in any of the evils enumerated in the section." But, the Supreme Court holds, "if evils disclosed themselves which entitled Congress to legislate as it did, Congress had power to legislate generally unlimited by proof of the existence of the evils in each particular situation. Section 11 (b) (1) is not designed to punish past offenders, but to remove what Congress considered to be potential if not actual source of evil. And nothing in the Constitution prevents Congress from acting in time to prevent potential injury to the national economy from becoming a reality."

Gas Accessory Sale Contracts

(Continued from page 43)

For illustration, in Southwestern Gas & Electric Company v. State, 190 S. W. (2d) 132, reported January, 1946, it was shown that a state Legislature passed a law which provides that public utilities paying an occupation tax shall not be required to pay license fees imposed by "Chain Store Tax Law" for the privilege of selling gas and electric appliances.

The state sued the Southwestern Gas & Electric Company to collect chain store taxes for the years 1941, 1942, and 1943.

It was alleged that the gas and electric company must pay both the occupational tax and the tax imposed on chain stores for the privilege of selling gas and electric appliances. The higher court refused to agree with this contention. This court held that since Southwestern Gas & Electric Company had paid the occupational taxes it was not required to pay taxes under the chain store tax law. This court said:

"The power of the Legislature to classify as a separate business for purposes of taxation, the operation of gas or electric utilities, can not seriously be questioned. . . . There is no merit in the state's further contention that some of the enumerated articles sold in stores in question were other than electric appliances, such as water pumps, ranges and domestic refrigerators."

In other words, this court held that the term "electric appliances" includes all equipment used in connection with any electrical current.

CRUSE-KEMPER COMPANY
AMBLER, PENNA.
GAS HOLDERS
Low Pressure High Pressure Inspection
Purifiers Tanks Flues
Over 40 Years of Sound
Steel Plate Construction

Canadian Gas Association Holds Its 39th Annual Convention at Murray Bay, P.Q.

CLEAR SKIES, smooth water, fair winds and cool comfort for the 39th annual Convention of the Canadian Gas Association greeted the delegates as they left Montreal by the Steamship Tadoussac on June 17th for their objective, Manoir Richelieu at Murray Bay, P.Q.

Additional delegates boarded the steamer at Quebec City on arrival there early the next morning.

The Canadian delegation drawn from coast to coast was augmented by about one hundred from American companies in the east, south and midwest.

Exuberant good-will coupled with the prevailing Canadian courtesy was everywhere in evidence. The sail down the St. Lawrence quickly resulted in many new acquaintances and also served further to cement friendships of long standing.

The arrival at Murray Bay at 1 P.M. enabled an afternoon session on Tuesday. Outstanding subjects discussed at the meeting included House Heating, Dealer Cooperation, Pilot Outages, L.P. Gases and Sales Activities.

Manufacturers Section

This was a meeting of class C and D manufacturer members who heard an address by H. Leigh Whitelaw, Managing Director of Gas Appliance Manufacturers Association of New York.

Mr. Whitelaw reviewed the experiences in the formation and functions of G.A.M.A. and stated that greater emphasis should be placed on the sales of appliances in order to meet present competition. He recommended that only the highest class of appliances should be sold on the basis of equipment that will do a better job than competitive equipment. The gas industry, he stated in closing, sells six times the amount of energy sold by the electric industry.

At this meeting a Manufacturers Section of Canadian Gas Association was duly formed having been endorsed by executives of the Association.

A. J. Strain of Ruud Manufacturing Co., Toronto was elected Chairman and D. B. McWilliams of Dresser Manufacturing Co. of Toronto, Vice Chairman, A. Mackenzie of Toronto was appointed Secretary.

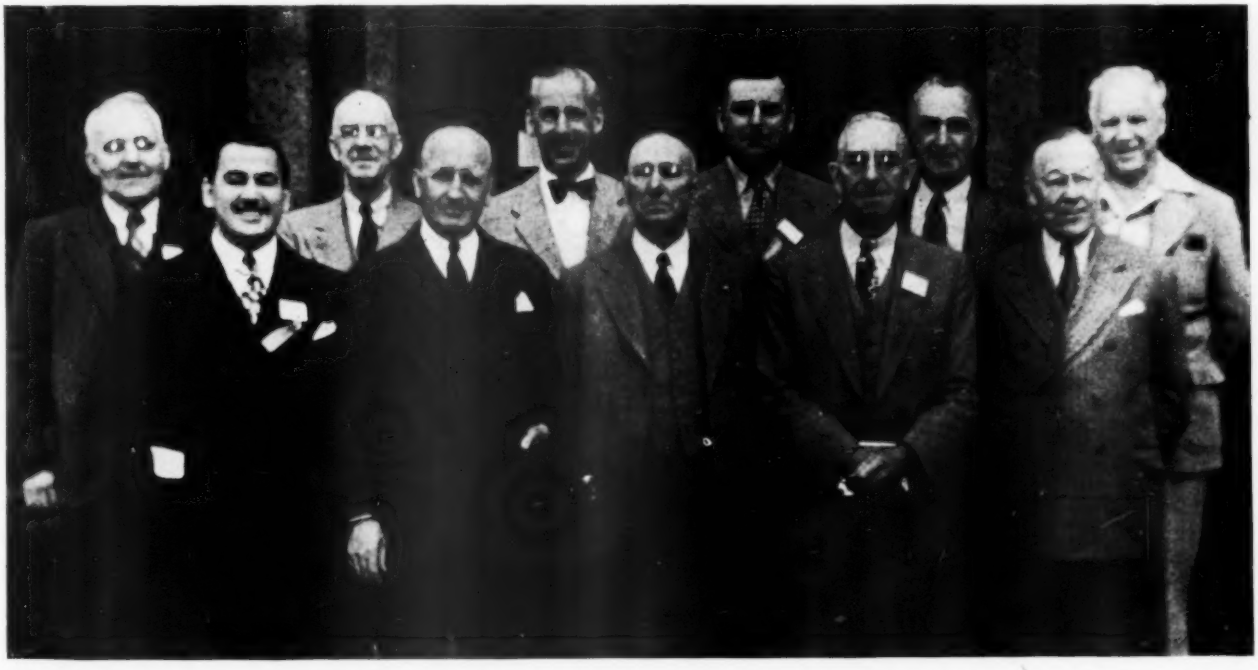
Wednesday Session

Under the chairmanship of President J. D. Von Maur this session opened with a brief address by Clifford E. Paige, President of the Brooklyn Union Gas Company, Brooklyn, N. Y.

Among other subjects Mr. Paige stressed the point that gas companies are organizations of *service* and that this principle should ever be borne in mind.

J. L. Stiver of Ottawa, Director Electricity and Gas Inspection Services, Dept. of Trade and Commerce, stated in his talk that the Government Council is now working on approval standards for orifice meters. He further stated that in Canada there are now 767,934 meters in service.

The chair was then taken by R. M. Perkins of Chatham, Ont., Super-



This group on Casino steps. Back row, l. to r. Wm. Vickers, Kitchener, Ont.; Geo. W. Allen, Secy-Treas., Toronto; T. L. Moffat, Weston, Ont.; R. M. Perkins, Chatham, Ont.; M. H. Smith, Preston, Ont.; E. Carl Sorby, Rockford, Ill.; Front row, l. to r., Geo. E. Cross, Weston, Ont.; H. Leigh Whitelaw, New York; J. D. Von Maur, Pres., Toronto; Col. Thomas Weir, Chatham, Ont.; S. B. Severson, Buffalo, N. Y.

viser of Customer Relations, Union Gas Co. of Canada.

Accomplishments of the Gas Industry in Canada During the War

This subject was presented in an able address by E. J. Tucker, Vice President and General Manager of Consumer's Gas Co. of Toronto.

He stated in part that the outbreak of the war found "production and distribution facilities in excellent condition with ample margin of reserve plant over and above immediate requirements."

The industry took care of normal demands of regular customers as well as the additional requirements of old and new industrial establishments.

In some areas gas demands reached as high as six times their peace time industrial loads and were successfully met.

The problem of most concern was adequate manpower, which was equally acute in both operating and administrative departments.

Home service departments contributed valuable national war service with lectures and radio talks on conservation.

"By reason of its war record the Canadian Gas Industry stands higher in the esteem of its customers than it has for some time past."

Some Experiences With Gas House Heating in a Canadian City by P. W. Geldard, Asst. Distribution Engineer, Consumers Gas Co. of Toronto was next on the program.

His paper described in considerable detail the experiences of his company in the house heating field dating back to the first such installation in 1912.

There are now 1491 house heating customers in the district served, the Distribution Department of the Company "having the final say as to whether or not any particular job is to be installed."

Method of procedure and a series of pie charts and tables are included in the paper.

An appendix by J. A. Morrison, Supervisor of Laboratory for the company, covers an investigation of house heating complaints.

The afternoon session opened with the reading of Committee Reports and proceeded with the reading of the following papers under the chairmanship of R. M. Perkins, Union Gas Company, Chatham, Ont.

Factors of Gas Industry Progress by Hall M. Henry, Director of Gas Operations, The Negea Service Corporation, Cambridge, Mass.

Mr. Henry's paper reviewed the gas industry's "fundamental position as a purveyor of fuel" pointing out the high overall efficiency of the gas plant compared with the electric station.

In setting forth the fuel characteristics of gas and its eight points of superiority, he stated that "we can conclude that the Gas Industry is in a fundamentally sound position because it upgrades low grade fuel; because of its relatively high efficiency of conversion; because of its comparatively low production investment cost; because of its reasonably high utilization efficiency; and finally, because gas possesses qualities unattainable in any other fuel."

There followed a slide presentation **"The Seven Keys to Comfort"** by V. J. Jenkinson, Sales Manager of Minneapolis-Honeywell of Toronto, accompanied by a talk on thermostatic control.

Uses of Propane in Gas Manufacture by B. C. Blizzard, manager of the Liquefied Gas Department of Imperial Oil Ltd. of Toronto, surveyed the close relationship between the oil and gas industries. He discussed the properties of L.P. Gases and their uses in coal gas plants as well as complete L.P. plants with special reference to Air-Mix plants.

Annual Dinner

Following the President's reception in the Casino the Annual Dinner and Entertainment was held in the Manoir dining room with E. Carl Sorby, Vice President of Geo. D. Roper Corp. as guest speaker.

Following the usual toasts to the King, the President of the United States, to the American and Canadian Gas Associations and to the Ladies, Mr. Sorby made a dramatic entrance in costume and gazed into the "crystal ball" for inspiration.

He stated that the automatic home of tomorrow is definitely here today; that we already enjoy a pushbutton living and to this progress we can all contribute personally. "Let us take off our coats and roll up our sleeves in the effort."

Speaking as chairman of the group of gas range manufacturers within the industry, he said "there will be no middle road in producing the ultimate in gas ranges."

There followed the presentation of the C.G.A. Meritorious Service Medal to Major J. C. Turgeon of Edmonton Alta. which was accepted in his behalf by Julian Garrett, General Manager of North Western Utilities Ltd. and former President of C.G.A.

To the President-elect, Colonel Thomas Weir of Chatham was entrusted the custody of the Memorial salver presented to the C.G.A. in 1933 by the Institution of Gas Engineers, London, England.

Mr. Von Maur welcomes the incoming president, Col. Thomas Weir, G. Mgr. of Union Gas Company of Canada.

Thursday Session

With R. M. Perkins, of Chatham as Chairman this session opened with the presentation of **Dealer Cooperation and Appliance Standardization** by S. B. Severson, President of Dominion Natural Gas Co., Ltd. The paper is published elsewhere in this issue of the *Journal*.

In his own comments on specifications for CP ranges he considered automatic time control as optional, not mandatory.

Mr. Carl Wolf, in making comment, said that instead of the term "safety pilot," the title "automatic pilot" would be preferable. He referred also to national statistics in U. S. on cause of fires where gas stands 24th in frequency and that electricity is responsible for six times as many as gas. He also called attention to the new program of ap-

pliance financing shortly to be recommended by American Gas Association.

Some Problems in Gas Utilization, next on the program, was presented by H. D. Lehman, Manager of Customers Service Dept. of Philadelphia Gas Works Co.

In dealing with pilot outages, their causes and results he discussed the effects of vapor-phase gum and liquid-phase gum along with methods of control and filtration.

As additional comment he stated that he considered electric ignition of pilots a doubtful necessity; that all pilots should be filtered, the cost of such filtering units being very low and that no stoppages occur when these are used. Such filters have been used in Philadelphia for about eleven years with complete success. He recommended that any filters used should have approval of A.G.A. Laboratories.

An Apparatus for the Determination of Organic Sulphur Compounds in Manufactured Gas was described in the paper by N. L. McNiven and I. J. W. MacHattie of the Ontario Research Foundation.

This paper described with diagrams and a photo of complete assembly an apparatus which was designed for the simultaneous determination of the known organic sulphur compounds in coal gas and carburetted water gas at the plants of The Consumers' Gas Company, Toronto. The design and arrangement of the different items together with the method of operation are believed to contribute to increased simplicity of an essentially complicated procedure without undue sacrifice of accuracy.

At the Thursday session, James I. Gorton, CP Promotional Director for Gas Appliance Manufacturers Association spoke on national publicity and the promotional literature and other material available to the industry. He showed samples of some of the colorful printed matter now in distribution and called attention also to the dealer advertising program and cooperative literature which has been issued. Attention also was directed to the big field in the replacement of old gas ranges with modern types.

H. V. Potter, Director of the New Freedom Gas Kitchen activities of A.G.A. made a stirring presentation of his subject, closing with the magician's conversion of two eggs (including the shells) coupled with two jiggers of flour into a live rabbit—all in ten seconds.

Friday Session

But one paper was scheduled for this session — **The Insulation and Protection of Underground Gas Distribution Systems with Pipe Line Enamel** by P. D. Mellon, V. P. Canadian Western Natural Gas, Light, Heat and Power Co. of Calgary, Alberta.

Mr. Mellon read his paper by title only, with some brief comments, as it was furnished in booklet form for later study.

Final reports under the chairmanship of Mr. Von Maur were then presented and the presidency turned over to the incoming President-elect.

Officers elected for the ensuing year are: *President,* Col. Thomas Weir, General Manager Union Gas Co. of Canada, Chatham, Ont. *First Vice President,* E. H. Rohrer, Vancouver, B. C. *Second Vice President,* F. A. Brownie, Calgary, Alta. *Executive Secretary-Treasurer,* Geo. W. Allen, Toronto (re-elected).

Entertainment

The Gas House Club, with a committee under the able chairmanship of A. J. Strain of Toronto provided privileges and entertainment and refreshment at the Casino to members and guests during the hours between sessions. It functioned most effectively in developing and cementing friendships.

Dancing in the Casino was enjoyed every evening with orchestral music and refreshments.

George W. Allen
Executive Sec'y Canadian Gas Assn.
His arrangements for program, transportation and reservations were complete in every detail.

A. J. Strain, Chairman of Entertainment Committee which included George E. Cross, Alex Mackenzie and J. E. St. Jean.

In the golf tournament, F. A. Lucas of Toronto won first prize on the draw, having been tied with James Becker of Three Rivers, G. M. Gass won a prize as "hardest worker." In the "kickers handicap," prize winners in order were E. C. Town, D. E. Kennedy, S. E. Preston and Ed Niederer, Jr.

Bridge parties for the ladies were held in the alcove adjoining the main lobby of the Hotel, with appropriate prizes awarded.

Many of the delegates included the Saguenay River trip before returning to Montreal. It was inspiring to newcomers and still fascinating to the initiated.

Gild of Ancient Supplers

Seven members of the Gild of Ancient Supplers, organization of "old-timers" who sell appliances, equipment or services to the gas industry, gathered at breakfast May 28 during the convention of the Liquefied Petroleum Gas Association at Colorado Springs. Members present were Carl Liden, Ohio Foundry & Mfg. Co.; Seward Abbott, Servel; H. W. Springborn, LP-Gas Magazine; H. E. Howerton, Hardwick Stove Co.; Carl Sorby and Romus Bergh, Geo. D. Roper Corp.; and Elmer Cone, Ruud Mfg. Co.

On June 20th attendants at the Gild Breakfast held at 8:29 A.M. at Hotel Manoir Richelieu, Murray Bay, Canada, were as follows:

Alderman E. Carl Sorby, Roper Corp.; Warden Frank Post, Robertshaw Thermostat Co.; Supplers George Knight, Consumers Gas Co., Toronto; Jim Gorton, C-P Promotion Director; A. F. Jenkins, Roper Corp.; L. F. Fairchild, Sprague Meter Co.; W. H. Cheeseman, Sprague Meter Co.; H. Richard Lewis, Ruud Mfg. Co.; George Steere, Boone County Coal Co., Swampscott, Mass., and Mayor J. A. Mulcare, New York.

New Equipment

Masonry Cutting Blade

The Champion "Jade" blade, it is claimed, provides longer life . . . lowest cost per cut . . . quick cutting . . . a blade to cut every type of masonry efficiently . . . and elimination of operator eye-strain through the exclusive safety jade color.

Champion Masonry Blade

They are available in 12" and 14" sizes to fit any type masonry cutting saw. Blades are equipped with blotters for safety in operation and steel centers for efficient operation and protection of machine shaft.

Complete details and prices can be had by writing The Champion Mfg. Co., 1307 Washington Ave., St. Louis, Mo., Dept. J.

Fuel Loss Calculator

A slide rule type of calculator of particular interest to boiler room operators is being offered by the Hays Corporation, manufacturers of combustion instruments and control.

The calculator is used after the percent of CO_2 in the flue gas, the temperature of the flue gas and the room temperature have been determined. The calculator is based on several fuels of different analysis, gases, coals and oils, and a wide range of flue gas temperatures making it practical for use in the majority of boiler rooms.

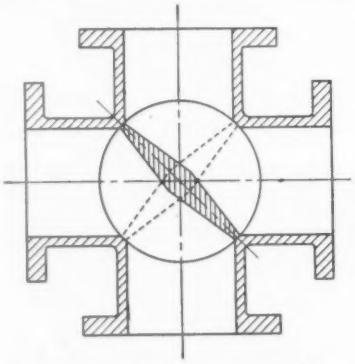
The figures on the calculator reveal the percent of total heat loss in the flue gas. Instructions accompanying the calculator show how heat loss can be converted into fuel loss which is really the information the engineer is seeking. The figures on the various scales are original calculations by the Hays Engineering Department and are dependably accurate.

The calculator is being distributed to all interested users without cost. Simply write the Hays Corporation, Michigan City, Ind.

Heat Loss Calculator
Oils and Coals are on opposite side.

Four-Way Transfer Valve

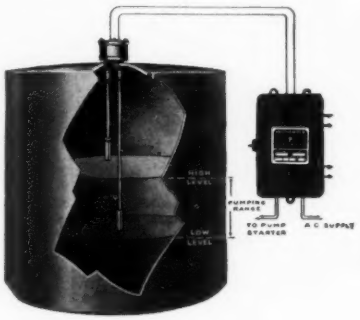
A single vane, quick-operating control valve, used to transfer chemicals, oil, water and solutions from one line to another. It can be manually or automatically operated. Available for a wide range in pressure and at sub-zero or elevated temperatures. Equipped with adjustable stop screws and indicator to determine vane position. Can be fabricated from all types of metals in sizes from 4 to 72 inches. Made by R-S Products Corp., Wayne Junction, Philadelphia, Pa.



Sectional view through the body.

New Liquid Level Control

Photoswitch Level Control Series 10 makes available a series of rugged maintenance-free relays for the level control of all electrically conductive liquids. Contact with the liquid is made only by a stainless steel probe rod (there are no floats, bellows seals, or stuffing boxes). With A. C. in the probe circuit, no electrolytic action is possible. Mica insulated probes insure against leakage.



Liquid Level Control.

Stated to be the only floatless level control containing no vacuum tubes and operating with low voltage in the probe circuit, this unit is recommended for the control of: water, ammonium chloride, copper nitrate, sulphate, sodium chloride, potassium, hydroxide, and many other acids, bases, and salts. Selection from four terminals on the terminal block enables the control to be matched to the specific resistivity of a material.

Stainless steel probe rods are suspended in the tank from probe fittings. The liquid to be controlled makes or breaks contact with the probe and transmits to the control a minute electrical current at low voltage. Without the use of vacuum tubes, this current controls a power circuit which operates a relay to actuate signals, valves, or pumps.

Specifications: Supply: 115 or 230 volts, 50/60 cycles A.C.; total power consumption ½ watt. Output: Single pole, double-throw relay. Contacts: Designed for motor starter, motorized, or solenoid valve operation. Arc suppression is supplied on both contacts for increased contact life. Probe Circuit: Will carry a resistance as high as 3500 ohms.

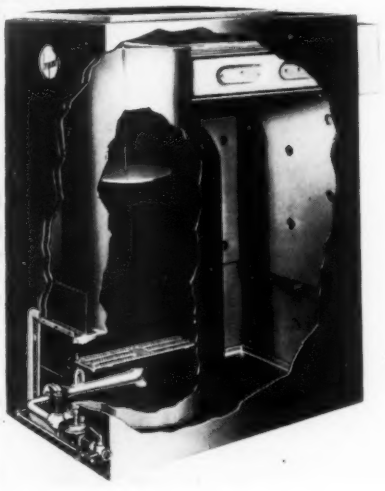
Complete information in Bulletin 201P issued by Photoswitch Inc., 77 Broadway, Cambridge 2, Mass.

and Appliances

New Gas Fired Furnaces

Bryant Heater Company, Cleveland announces the addition of steel furnaces to its line of gas-fired domestic heating units

Available for gravity or forced-air systems, with push-button or automatic electrical ignition, the new furnaces are rated at 70, 90, 120 and 140,000 BTU/hr., and meet the latest A.G.A. pre-heating element temperatures.



Bryant Domestic Furnace

Particular attention has been paid to the silent operation of the unit, and the almost total elimination of flat surfaces has done away with the "oil-canning" and rattling which usually occur in furnaces of this type during the warming-up and cooling periods.

Combustion chamber and heat exchanger have been arranged in updraft layout to avoid entrapment of condensate and resultant corrosion within the exchanger tubes.

The burner unit is of rectangular, rather than circular shape and results in improved and concentrated heat transfer without hot spots in the combustion chamber.

Easy access to the heating elements simplifies cleaning. The drum type combustion chamber is accessible for cleaning through the door, while the heat exchanger tubes can be readily reached by removal of a portion of the draft diverter assembly. This operation does not require dismantling of the flue pipe.

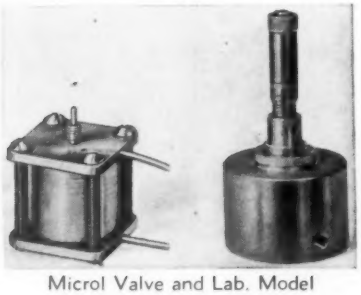
Completely packaged, the 70 and 90,000 BTU/hr. units are "door size" for especial ease in installation.

Micrometer Valve

The Microl Valves shown use a basically new principle to obtain ultra-precise and continuous control of the flow of either liquids or gases.

Using this new principle, 600 inches of capillary passage are enclosed in a metal container 1½ inches square. Flow control is obtained by moving the adjustable plunger thereby varying the length of the capillary passage continuously from 4 inches to 600 inches.

The flow of air and other gases may be varied over the range of 0.2 to 60 cubic inches per minute with a pressure drop across the valve of 15 pounds per square inch. Under the same conditions, the flow of water and other light liquids can be varied from 0.04 cc to 10 cc per minute.



Microl Valve and Lab. Model

The valve on the right is a laboratory test model with precise micrometer adjustment to demonstrate the principle of operation. It is not for sale. The valve on the left is sold to equipment manufacturers who use the Microl Valves as an integral part of their equipment and provide their own special means of mounting together with either manual or automatic adjustment. It is 1½ inches square and 2 inches high. Made by Stevens-Arnold Co., 22 Elkins Street, So. Boston, Mass.

New Hermetically Sealed Snap-Action Thermostat

The Spencer Thermostat Company, Attleboro, Massachusetts, announces a new hermetically sealed snap-action thermostat C-4910 for temperature regulation or high-limit alarms in refrigeration or other cooling or heating applications. These fixed-temperature, non-adjustable thermostats are for use in such applications as deep-freeze units, frozen food cabinets, bottle dispensers, refrigerated show cases, and walk-in coolers, as well as in heating applications requiring a hermetically sealed snap-action thermostat.

Snap Action Thermostat

They are actuated by the Spencer snap-acting disc mounted in thermal contact with the sealed housing. They will operate in any position and are unaffected by ordinary vibration. They are supplied, ready to install, with a heavy-duty, all rubber, two-conductor cord 30 inches long.

Minimum temperature setting is minus 10°F., maximum standard temperature setting 120°F. Minimum cooling temperature differential, with contacts closing on temperature rise, is 8° F.; minimum heating temperature differential, with contacts opening on temperature rise, is 10°F. Higher settings and wider differentials can be specified.

Available in the following ratings: 115-230 volts A-C, 10 amps., ½ h.p.; 125 volts D-C, 1 amp.

Pipe Joint Compound

Lake Chemical Co., 607 N. Western Ave., Chicago 12, Ill. offers a pipe joint compound in handy, clean, easy-to-use stick form. You rub 3 or 4 strokes of stick across pipe threads and it spreads and fills threads when turned. Encased in a convenient cardboard holder, the stick may be carried around in a pocket or tool kit.

It is claimed to withstand gasoline, oil, butane, propane, Freon, air, water, steam, acid, gas, brine and sulphur dioxide, and that joints can be disconnected easily months and years after applying. Lubricates and completely seals pipe joint threads, nuts, bolts, gaskets, turnbuckles, etc. Withstands vibration, temperature changes, deflection, pressure.

News of the Gas Industry

New Jersey Gas Association Resumes Activities

The activities of the New Jersey Gas Association have been resumed, after being suspended since January 29, 1942, because of the war. At a meeting held in Trenton, New Jersey, April 26, 1946, a new constitution was adopted and new officers were elected.

The following officers and directors were elected:

President—P. D. Gardner, Public Service Electric and Gas Company, Camden,

First Vice President—H. H. Melvin, The Cumberland County Gas Company, Millville,

Second Vice President—Harry A. Sutton, Public Service Electric and Gas Company, Newark,

Secretary-Treasurer—Elmer A. Smith, Public Service Electric and Gas Company, Newark,

Director—One year—T. R. Dobson, Jersey Central Power and Light Company, Asbury Park,

Director—Two years—G. B. Webber, Public Service Electric and Gas Company, Newark,

Directors—Three years—L. W. Becker, Elizabethtown Consolidated Gas Company, Elizabeth; H. H. Ferris, Public Service Electric and Gas Company, Newark; E. J. Menerey, Peoples Gas Company, Glassboro; T. H. Powers, Salem Gas Light Company, Salem; Earl Smith, Atlantic City Gas Company, Atlantic City.

The Advisory Committee of the Association was immediately assigned the task of studying current problems and recommending to the Board of Directors the scope of the activities which the Association should follow during the ensuing year.

Under the new constitution, the Association year ends on September 30 of each year, and now coincides with the American Gas Association year.

Oscar H. Fogg, Chairman of Con. Edison Co., Retires

Oscar H. Fogg, chairman of the Executive Committee of Consolidated Edison Company of New York, Inc., retired May 31 in accordance with the Company's age limit. He resigned that post, which he had held since 1942, and it has been abolished by the Company. He will continue as a trustee of Consolidated Edison Company. He has been a member of the Board of Trustees since 1934.

Mr. Fogg had a long and distinguished career in the public utility industry. He entered the gas business with the United Gas Improvement Company in Philadelphia, where he was born. In 1899 he became a cadet engineer, stationed at a plant of that company in Yonkers. In 1901 he became superintendent of the Newtown and Flushing Gas Company, which subsequently became a part of the Consolidated Gas—now Consolidated Edison—System. In 1904 he joined the Consolidated Gas Company and served in various research and engineering jobs.

Oscar H. Fogg

During World War I he entered the Army and was engaged in the designing of plants for repair and maintenance of ordnance material in France, and also in recruiting and in organizing and training enlisted and commissioned personnel. He was placed in command of the Construction and Maintenance Divisions of the Ordnance Department, A. E. F., with the rank of liteutenant-colonel. The French Government gave him the Ordre de l'Etoile Noire, and the United States gave him the Distinguished Service Medal.

In 1919, upon his discharge from the Army, Colonel Fogg became secretary-manager of the American Gas Association, returning to the Consolidated Gas Company in 1924 as vice-president. In 1937 he was elected vice-chairman of the Board. He retained this title until he was made chairman of the Executive Committee of the Company in 1942. Mr. Fogg was also chairman of the Executive Committees of most of the companies in the Consolidated Edison System.

Mr. Fogg was president of the American Gas Association for two years, beginning in 1927. He has recently served as a member of the Mayor's New York City Post-War Industrial Committee.

CONVENTION CALENDAR

September

9-11 *Sixth Annual Appalachian Gas Measurement Short Course*, West Virginia University, Morgantown, W. Va.

10-12 *Pacific Coast Gas Association*, Annual Convention, Fairmont Hotel, San Francisco.

12-13 *Midwest Industrial Gas Council, The Radisson Hotel*, Minneapolis, Minn.

October

7-11 *American Gas Association*, Annual Meeting, Atlantic City, N. J., Convention and Exhibition.

Society of Gas Engineering of Con. Edison, N. Y. C.

Organized in 1905, the membership of the Society of Gas Engineering is composed of Consolidated Edison Company employees whose duties are concerned with the manufacture and distribution of gas and the construction work in the gas plants. The meetings, of which there are four during the year, are for the interchange of ideas and discussions on the technical phases of the members' work for the System.

At their annual meeting, Hugh L. Peden was elected president, W. S. Walker vice-president, and Fred Glaeser and George Knobloch were re-elected secretary and treasurer. Mr. Glaeser has been secretary since 1936 and Mr. Knobloch has been treasurer since 1941.

A new Executive Committee, comprising T. G. Weber as chairman, S. S. Tomkins and J. J. McNamara, were also elected for the year which begins July 1.

Olds Elected Director Coleman Co., Inc.

Stockholders of the Coleman Company, Inc., meeting in Wichita, Kansas, May 21, elected Dean Olds, chief design engineer of the company's major appliance division a member of the Coleman board of directors.

Mr. Olds joined the company in 1929 and since that time has been closely identified with its extensive design and research program.

Michigan Cities Will Have Natural Gas from Panhandle Eastern Pipe Line Co.

A contract for natural gas transportation and storage project designed to assure some 240 Michigan communities of a plentiful supply of natural gas for 25 years has been made by Consumers Power Company and the Panhandle Eastern Pipe Line Company. It was emphasized, however, that Consumers will be unable to connect additional house-heating equipment until after this year.

Communities that will benefit include Flint, Saginaw, Kalamazoo, Bay City, Pontiac, Midland, Royal Oak, Mt. Clemens, Jackson, Marshall, Ferndale, Hastings, Ionia, Lansing, Owosso and many others in Barry, Bay, Calhoun, Clinton, Eaton, Genesee, Gratiot, Ingham, Ionia, Isabella, Jackson, Kalamazoo, Lapeer, Livingston, Macomb, Midland, Montcalm, Oakland, Saginaw, Shiawassee, Tuscola, Van Buren and Wayne Counties.

The agreement provides for:

1. Conversion of the Winterfield and Cranberry Lake natural gas fields in Clare, Missaukee and Osceola counties into one of the world's largest natural gas storage areas where natural gas, transported 1,500 miles from Texas and Oklahoma during the warmer months, will be stored for use in helping to meet the peak demands of winter.

2. Construction of a 150-mile pipeline, 24 inches in diameter, from a junction with Panhandle's pipeline five miles southeast of Chelsea to the storage fields.

3. Erection of a large compressor station at the junction point near Chelsea and another compressor station at the storage field to pump the gas into storage in the summer and out again in the winter when it is needed by Michigan homes, industries, stores and offices.

4. Establishment of a new company to be known as the Michigan Gas Storage Company, to be owned principally by Consumers and possibly in part by Panhandle, which will own and operate the storage area, the new pipeline and certain major transmission pipelines now held by Consumers. This new company will receive, transmit and store natural gas delivered to it by Panhandle. This gas will later be delivered to Consumers Power Company at the "gates" of the communities where it is to be used.

GAS HEATING AND COOKING EXHIBIT OF HARTFORD GAS CO.

Hartford Gas Company Exhibit at Home Building Show

Operated primarily for educational purposes the New Freedom gas exhibit of the Hartford Gas Company at the Home Building Show from May 18 to 25th, attracted wide attention.

The show continued for seven days with a total attendance of 11,900. Great interest was shown in the kitchen and gas heating factories.

Some 15,000 pieces of promotional material and 2500 New Freedom matches were distributed. A Roper range on display was given away as a door prize.

Considerable interest centered on plans for modernizing kitchens. View of the exhibit is seen in the adjoining cut.

Petroleum Exposition Date Postponed till 1948

The twelfth International Petroleum Exposition, originally scheduled to be held in Tulsa next May, has been postponed until the spring of 1948, according to action taken May 31st by members of the executive committee.

Range and Water Heater Sales Show Increase

GAS RANGES — Shipments of gas ranges in April climbed 19 percent higher to 152,000 units, the largest number shipped in any month since V-J Day, and 22 percent above average monthly production in 1939. The previous high was in January when 132,000 ranges were shipped. Continued high production is contingent upon an early settlement of the coal strike since sheet steel and castings are limiting production.

GAS WATER HEATERS—Shipments of gas water heaters reached 110,000 units in April, up 13 percent over March shipments of 97,000 but still slightly below the high level maintained between October and January. April shipments were 55 percent above the 1939 monthly average of 71,000. Like gas ranges, future production of gas water heaters may be limited by materials shortages aggravated by the steel and coal strikes.

April shipments of elecrtic ranges were 23,000.

Above figures are from Civilian Production Administration.

SUPERIOR GAS METERS

For Sound Values and Continuous Operating Economy

Meters for Domestic and Industrial Use. All Sizes 5B to 60C.
Wet Test and Demonstration Meters — Diaphragms —
Service Cleaners — Provers — Meter Repairs

Write for details and quotations

SUPERIOR METER COMPANY, INC.

167 41st Street Brooklyn, N. Y.

Broaden Approach To Design of Central Heating Equipment

Seeking a broader scientific approach to the design of central heating equipment, one of the most outstanding and important research projects under way at the American Gas Association Testing Laboratories centers on the development of fundamental heat transfer data.

Sponsored by the Committee on Domestic Gas Research, the work is being carefully guided by the Technical Advisory Group for Central Gas Space Heating Research in order that every aid may be given designers in predicting temperature distribution in combustion chambers and the elimination of hot spots.

Little data of a practical nature on fundamental laws governing heat rtansfer through heating element surfaces exposed to direct radiation from burner flames are available at present. The current project is directed towards supplying such information as well as establishing the proportion of total heat transferred by radiation, combustion and convection, this representing one of the most complex problems involved in heat transmission studies. Efforts are being made to determine the combined heat transfer coefficients vertically along the length of an experimental heating element specially constructed for the purpose.

In order to minimize errors in the determination of heat transfer coefficients of gases inside the exchanger, known quantities of air, which possesses a high heat transfer coefficient, are forced past the outside of the heating element but within the insulating jacket. Air and gas are metered at a predetermined rate in known proportions before the mixture is burned, thereby providing control of primary air, secondary air, and gas input rate. Temperatures of inlet and exchanger air, heating element and jacket surfaces, and flue gases are recorded.

Upon completion of the investigation it is intended that data will be presented in such a manner as to make them applicable to gas-fired heat exchangers that may be air, water or oil backed. It is planned to compile a series of tables, charts, and sample calculations which will facilitate work of design engineers in applying the data. Information will be augmented to the extent practicable by data from literature in order to incorporate such variables as flame temperature and mass, shape of combustion chamber and addition of baffles.

Clark Rejoins Laboratories Staff

Navy Lieutenant Howard C. Clark, Chief Engineer aboard the destroyer USS Gherardi during the war, has returned to the Laboratories and resumed his former duties in the Inspection Department.

Lt. Clark is a veteran of four years of intensive action, having participated in six invasions in three major war theaters. He also made forty convoy trips across the Atlantic.

Williams with A. O. Smith Corp.

Donald D. Williams, of Lincoln, Neb., has joined the water heater sales division of the A. O. Smith Corp. and will give technical assistance in the sale of both domestic and commercial water heaters under the direction of James F. Donnelly, product supervisor.

Donald D. Williams

Williams is an engineering graduate of the University of Nebraska. He did sales engineering work from 1932 to 1943 for the Iowa-Nebraska Light and Power Co., and for a part of that time was in charge of industrial gas sales and installations for that utility.

In 1943, he went to the seventh service command of the army as a civilian mechanical engineer on heating and volume water heating. He left that post to join A. O. Smith on June 1.

E. T. Howard Gen. Sales Mgr. Fraser & Johnston Co.

E. T. Howard, for the past 11 years sales manager for General Controls Company of Glendale, Calif., has been named general sales manager of Fraser & Johnston Co. of San Francisco.

E. T. Howard

Mr. Howard is a director of the Pacific Coast Gas Association, and general chairman of its manufacturing section. He is also a director of the national Gas Appliance Manufacturers Association.

The firm produces the extensive line of Biltwel and Toridaire gas furnaces.

At the same time, Fraser & Johnston announced that Alec Easton, formerly assistant sales manager for Ray Oil Burner Co. and more recently a major in the U. S. Army connected with the Chemical Warfare Service, will serve as assistant sales manager of the firm.

Darrow Made Superintendent

Appointment of Joe C. Darrow as superintendent of distribution of the Dallas division, Lone Star Gas Company, has been announced by Wesley F. Wright, division general manager. Darrow succeeds George W. Martin, resigned.

Have you considered a
CHECK-UP
of
GAS PLANT PERFORMANCE
Investigations and Reports
by Qualified Engineers
COAL CARBONIZING COMPANY
314 North Broadway
St. Louis 2, Mo.

For Real Gas-purifying Power
CONNELLY IRON SPONGE
● To get top efficiency in gas-purification at the lowest cost, use Connelly Iron Sponge. It's the finest purification material to be had.
Connelly Iron Sponge has a high degree of activity. It gives longer service before fouling. It revivifies more quickly. Leading gas companies have been using this "blue-ribbon" purification material for years—they know it can be relied upon to do the best job.
If you have a problem in gas-purification, take advantage of Connelly's 71 years of experience. Our engineers will be glad to help you . . . there is no obligation. Consult Connelly!
CONNELLY IRON SPONGE & GOVERNOR CO.
Elizabeth, N. J. Los Angeles, Calif.
3154 S. California Ave., Chicago 8, Illinois

Federal Power Commission

The Federal Power Commission has authorized, by order and Opinion No. 134, El Paso Natural Gas Company of El Paso, Texas, and Southern California Gas Company and Southern Counties Gas Company of California, of Los Angeles, to construct and operate facilities, including about 1200 miles of inter-connected pipelines, to transport natural gas from Texas and New Mexico gas fields to markets in the Los Angeles area. The pipeline facilities are designed to meet a developing shortage in local natural gas supply for 3½ million persons in Southern California. Cost of the project is estimated at $70,000,000.

This integrated pipeline system is planned for three progressive stages of construction and operation, with gas deliveries by El Paso to the California companies at the California-Arizona border scheduled to commence by June 1947 and to continue for 30 years. The maximum contracted volumes to be delivered by El Paso are 125,000 Mcf per day the first year, 175,000 Mcf per day the second, third and fourth years, and 305,000 Mcf per day the fifth and succeeding years. The final stage of construction and operation is conditioned upon an election by the California companies prior to September 1, 1949.

The Federal Power Commission has announced its order and opinion (No. 133) authorizing (1) Natural Gas Pipeline Company of America and Texoma Natural Gas Company to construct facilities to increase Natural's sales capacity by 85,000 Mcf daily, (2) Natural to sell and deliver natural gas to distributing utilities in Illinois and Iowa to serve markets now served with mixed or manufactured gas, and (3) Chicago District Pipeline Company to make additions to its present pipeline system to receive increased volumes of natural gas from Natural for delivery to customers utility companies which distribute gas in the Chicago metropolitan area. The aggregate cost of the proposed construction work is estimated at $20,439,675.

The Federal Power Commission has authorized Northern Natural Gas Company, Omaha, Nebraska, to construct additions to its pipeline system extending from Texas through Oklahoma, Kansas, Nebraska, Iowa, Minnesota and South Dakota. The facilities are to increase its line capacity from 270,000 Mcf to 300,000 Mcf daily. Estimated cost is $7,886,076.

The Federal Power Commission has announced receipt of an application by Cities Service Gas Company, Oklahoma City, Oklahoma, for authorization to construct and operate a 405-mile natural gas transmission pipeline from the Kansas portion of the Hugoton Field to the Wichita and Kansas City areas. Permission is also requested to "loop" an existing line in Oklahoma and to install other substantial additions to the company's pipeline system. Estimated cost is approximately $23,000,000 and construction is scheduled by the company to begin about April 1, 1947.

According to the application, the facilities for which a certificate of public convenience and necessity is sought are a part of a $30,000,000 four-year construction program contemplated by Cities Service.

Ralph C. Cameron Joins Ruud Mfg. Co. as Asst. to Pres.

Ralph C. Cameron, former merchandising manager of the Airtemp Division, Chrysler Corporation, has been named assistant to the president of the Ruud Manufacturing Company, Pittsburgh, Pa., makers of gas water heaters, it is announced by R. H. Lewis, Ruud president.

Ralph C. Cameron

Previously, Mr. Cameron was sales manager of the Kelvinator Division, Nash-Kelvinator Company, Detroit, Michigan, for five years, and was for ten prior years with the General Electric Company, Cleveland, Ohio in the management of its appliance and merchandising departments.

Native of Lorain, Ohio, he is a graduate of the Western Reserve University in Cleveland and holds a bachelor of science degree in business administration and a degree as a pharmaceutical chemist.

O'Brien, President Bury Compressor Company

The Bury Compressor Company of Erie, Pa., announces the election of B. C. O'Brien as President and General Manager. Mr. O'Brien is a graduate in mechanical engineering, of Rose Polytechnic Institute, and has had wide experience in air compressor manufacture and sales. Prior to joining the Bury Compressor Company, he was associated for a number of years with the Roots-Connersville Blower Corporation where he was Vice President and Sales Manager.

B. C. O'Brien

Lt. Col. Melvin, Amer. Stove Co. Receives Decoration

Lt. Col. Robert L. Melvin, now back on the job as sales representative for American Stove Company's heavy duty equipment in New England, was presented with the Legion of Merit Medal by Lt. Gen. Oscar W. Griswold at a ceremony that took place recently in Boston, Mass.

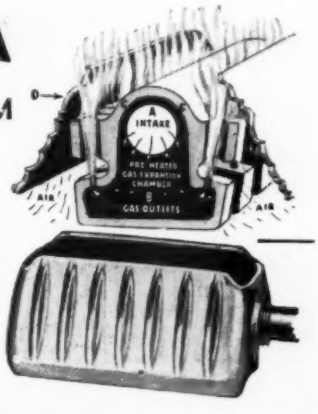
CLEVELAND

"A" TYPE METERS
"B" TYPE METERS
DIAPHRAGMS

Cleveland Gas Meter Co.
ESTABLISHED 1875
2009 Rockwell Ave., Cleveland 14, O. Phone CHerry 2351

COLUMBIA
LITTLE GEM
GAS BURNER

A small unit which may be used singly or in series. Each unit 6½ in. long x 4 in. wide. Wide application of domestic and commercial uses. May be used in round or square steam or hot water boilers, warm air furnaces, Arcola type heaters and circulating heaters. Used commercially for heating tanks, boilers, ranges, ovens, etc. Natural, manufactured, or mixed gas. Complete combustion without pre-mixing. Write for circular.



COLUMBIA BURNER CO.
729 Ewing Street
Toledo 7, Ohio

Low Cost Home Display Features Gas Service

Gas versus electricity as the fuel for residential heating, cooking, refrigeration and appliance operation will be on display in competitive roles at the Construction Industries Exposition and Home Show of Southern California to be held at Pan Pacific Auditorium, Los Angeles, July 12 to 21 under the joint auspices of the Los Angeles Chamber of Commerce and 14 building and allied trade associations.

Feature of the show will be two G-I homes, construction on which began in April. Designed by architects J. Cecil Strawn and William Lundeberg, the two exhibition houses are intended to demonstrate what can be built under the G-I home building priorities.

One of the houses will be an all-gas house, using gas only for heating, cooking and refrigeration. Designed as a three bedroom California ranch house type, the "Gas" house will be of the $7500 classification.

The second house will contain two bedrooms and its design will closely follow the modern trend in architecture and feature the exclusive use of electricity. This house will fall within the $6,000 price range.

Caloric Appoints L. H. Ernst Southeastern Sales Manager

Caloric Gas Stove Works, Philadelphia, Pa., has announced by Julius Klein, general sales director, the appointment of L. H. Ernst as southeastern district sales manager, with headquarters in Winston-Salem, N. C.

Mr. Ernst comes to Caloric from the American Gas Machine Company, Albert Lea, Minn. For the last 7 years he was eastern division sales manager for that company, his territory covering the entire eastern seaboard. He also has been associated with the utility industry as sales supervisor for Duke Power Company.

W. S. (Sim) Jones has joined the sales organization and is representing the company throughout the entire State of Michigan.

Mr. Jones has been in the appliance field for nearly 30 years, having been associated during that entire period with the Detroit Vapor Stove Co.

Eisenhower's Own Story of the War

One of the most important documents in history was released on June 28th by Arco Publishing Company, New York.

This is the personal, definitive account by the Supreme Commander of the world's greatest military operation, from the Day of Invasion to the Day of Victory in Europe. The book tells the first-hand story of the planning and execution of the invasion; the landings in Normandy; the breaching of the Atlantic Wall; the strategic attacks and retreats; the disappointments and successes which led to the final crushing victory over the Nazi machine.

The book is certain to create international discussion and to take its place as an indispensable source book for future historians.

Paper bound at $1.00; and bound in cloth and boards at $2.50.

Roper Design for Service

The Geo. D. Roper Corporation, Rockford, Illinois, has just announced a service training program for service men and service departments.

Used in this program is the Roper Service Hand Book which explains in detail the Roper service policy—care and use of the range—the principles of combustion. Top burners—oven—broiler—automatic ignition and all other features come in for their full share of attention.

Also there is a Roper Installation Manual. This booklet answers every possible question concerning assembly, delivery and installation.

Completing over four years of distinguished service in the Army Air Forces, ex-Col. William L. "Billy" Plummer has resumed his position with the Geo. D. Roper Corporation as Southern Division Manager.

The French Croix de Guerre and the Bronze Star were among the medals awarded to him for his services in France and England.

T. H. "Tom" Hall has been appointed Pacific Coast Division Manager for the Geo. D. Roper Corporation. His headquarters will continue to be in Los Angeles.

The Pacific Coast Division includes California, Oregon, Washington and Arizona. Division Manager Hall has been with Roper for the past 26 years, all of that time in the Pacific Coast Division.

American-Standard Plans Plant Expansion on Pacific Coast

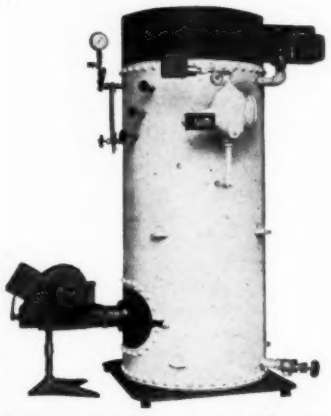
Plans for immediate large scale expansion of Pottery and Brass plant facilities in the West Coast area were announced today by Theodore E. Mueller, President of American Radiator & Standard Sanitary Corporation.

These plans include the erection of a new plant to produce Plumbers' Brass Goods and Fittings and an additional Pottery to make Genuine Vitreous China Plumbing Fixtures. Both plants will be located on the Pacific Coast to serve the expanding needs of this territory.

The company at present has two plants operating in California. Potteries at San Pablo, where Genuine Vitreous China Plumbing Fixtures are made and a large plant at Richmond which produces Cast Iron Enameled Fixtures.

Construction is to be started immediately and when completed, these plants will add materially to the company's total production, which Mr. Mueller said was steadily gaining in their numerous plants throughout the country.

LATTNER
GAS — OIL BOILER
3 HP to 35 HP.



Burns natural gas or regular furnace oils with equal efficiency using same burner.

P. M. Lattner Mfg. Company
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ENGINEERING CORPORATION
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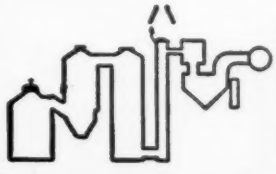


- BLUE GAS PLANTS
- WATER GAS MACHINES
- WASHER COOLERS
- CHARGING MACHINES
- GAS PURIFIERS
- CONDENSERS
- WASTE HEAT BOILERS
- PRODUCER GAS PLANTS

COMPLETE GAS PLANTS
INDUSTRIAL FURNACES
•
Automatic Water-Gas Controls
Hydraulically-Operated Valves
for Air, Gas, and Steam
•
The GAS MACHINERY CO.
CLEVELAND, OHIO

General Controls Appoints New York Representatives

Additions to the New York Factory Branch sales staff have been announced by J. F. Ray, Director of Sales, General Controls Company, Glendale, California.

The new appointees include F. E. Weldon, industrial engineer, who has been active in the electrical and mechanical control industries, and A. C. Kelterborn, an experienced sales and consulting engineer in the electrical field.

The New Factory Branch serves New York state, New Jersey and Connecticut.

Roper Appointments

J. K. "Jack" Busch, who has been with Roper for the past 15 years, in the Indiana-Michigan area, received the appointment as Midwestern Division Manager effective April 1. The Midwestern Division includes Illinois, Indiana, Michigan, Ohio and Kentucky.

Neal A. Eggebeen has joined the Roper Midwestern Division sales staff. He will work with J. K. "Jack" Busch, Midwestern Division Manager.

William T. "Bill" Briggs was added to the Roper Staff as Representative in the Philadelphia area. He will work with Eastern Division Manager Sol Weill.

William J. "Bill" Sullivan, leaving the government service as an engineer in the Redistribution and Salvage Branch, has joined the Roper Eastern Division sales staff. He will work with Sol Weill, Division Manager.

Florence Stove Company Opens New Salesrooms

Larger New York salesrooms have been opened by the Florence Stove Company of Gardner, Mass., in No. 1 Park Avenue building according to an announcement by Robert H. Taylor, New York manager.

"In order to display all the models of Florence Gas Ranges, LP-Gas Ranges, Combination Ranges, Electric Ranges, Oil Ranges, and Heaters, the company has more than doubled the amount of floor space. The backgrounds and arrangements of displays are not only modern and interesting, but they offer many helpful suggestions to dealers for better presentation of Florence Ranges and Heaters.

Dealers who come to New York are invited to visit the New York display rooms.

Koppers Company Names Three Vice Presidents

Appointment of three Vice-Presidents of Koppers Company, Inc., was announced June 20th by General Brehon Somervell, president of the company. The new Vice-Presidents are R. C. Wickersham, Pittsburgh; Edward R. Hall, Baltimore; and M. A. Hamrick, of Chicago.

Mr. Wickersham, who is a graduate of Lehigh University, joined the Koppers organization in 1916 as a draftsman. After serving in various capacities, in purchasing, plant management, and sales work, he was appointed an Assistant Vice-President in 1944. In his new capacity he will serve as a Vice-President of the company's Tar and Chemical Division.

Mr. Hall also joined the company in 1916, shortly after graduation from the Massachusetts Institute of Technology. During practically his entire career with Koppers he has been engaged in production work at one of the company's Baltimore plants, where he will now serve as a Vice-President and Works Manager.

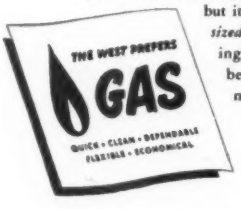
Mr. Hamrick's first employment with Koppers, in 1926, was as a billing clerk. He is a graduate of Oglethorpe University. Located in the company's Chicago sales office, he will serve as a Vice-President of the Wood Preserving Division in that city.

GAS Selling is not GUESS Selling

Reduced facsimile of 22 x 32-inch Chart poster in brilliant colors, available through your gas company. Display it! Use it!

. . . when you use the WATER HEATER SIZING CHART

"By-guess-and-by-gosh" methods of selling automatic gas water heaters are as obsolete as the pickle-barrel at the corner grocery. ★ Since the P.C.G.A. Sizing Chart is scientifically based on the capacity of the house rather than the number of persons who may occupy it, adequate hot water service is *assured* when you "chart" your sales. ★ Not only does ample tank capacity provide for every household need, but it also increases water heater life and efficiency. An *undersized* heater is constantly overworked; its life shortened accordingly. ★ You and the manufacturer and the gas company all benefit by proper sizing, which aids in heading off trouble; makes for carefree service and contented customers.



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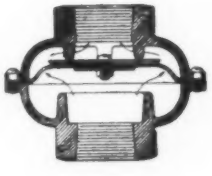
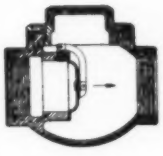
THE PACIFIC COAST GAS ASSOCIATION

One of the series of full page, 7x10, advertisements used in trade papers by Pacific Coast Gas Association. It features the Sizing Chart for water heater sizes, available through gas companies for dealers use and display. Ad prepared by Knollin Advertising Agency.

Pressure Controls for Gas and Air



HORIZONTAL
DIAPHRAGM
CHECK VALVES
DISC
VERTICAL



NORWALK VALVE COMPANY

Division of ALLIED CONTROL VALVE CO., *Inc.*

33 Railroad Ave. South Norwalk, Conn.

IVAN LUNDGAARD

Ivar Lundgaard, for many years manager of the Industrial Department of the Rochester Gas and Electric Corporation, died suddenly at his home in Rochester, N. Y., on June 6th. He was 64 years old.

A native of Norway, Mr. Lundgaard studied in Norwegian technical schools and qualified as a graduate mechanical engineer.

He came to the United States in 1904 and, after working in several other cities, came to Rochester in 1909 as a designing engineer for the R. G. & E. Successively, he held positions of associate engineer, assistant industrial engineer and industrial engineer until 1915, when he was made manager of the newly formed industrial sales and engineering department.

In 1921 he left Rochester to go to work for the Hartford Refrigerator Company and later at Devon Manufacturing Company at Brighton, Mass. He returned to Rochester in 1930.

W. F. NORTON

W. F. Norton died June 5th at his home in Nashua, N. H.

Mr. Norton was Treasurer of the Guild of Gas Managers for many years and was by general consent regarded as its leading member, having always taken a great personal interest in its success.

He was President of the New England Association of Gas Engineers in 1920-21, which organization was one of three which were merged in 1926 to form the present NEGA.

His connections with the NEGA included that of being an Association director for several years, a member of its Operating Division from its start, and being a member of several of its Committees. When Mr. Norton retired from active work in the gas industry in 1944, the NEGA directors made him an honorary life member.

N. W. GIFFORD

N. W. Gifford of Cambridge died June 3rd.

He was associated with the East Boston Gas Company which later merged with Boston Consolidated Gas Company, from which he was retired in 1928 as General Manager of the East Boston Division.

Mr. Gifford was Secretary of the New England Association of Gas Engineers for 21 years—from 1899 to 1920. In expressing the appreciation of the Association, President W. F. Norton remarked at the 1921 annual meeting. "Our success during this long period has been largely due to his unfailing work and we are all greatly indebted to him."

He was an honorary life member of the New England Gas Assocaition.

Facts For Industry

The Bureau of the Census has available for distribution a revised catalog of the publications in its Facts for Industry series. In addition to an up-to-date list of publications in the series this catalog provides an alphabetical index of over 3,000 products for which current or wartime information is available.

The catalog lists all Facts for Industry releases available as of May 1, 1946 from the Current Manufactures Statistics Program of the Census Bureau. It also includes releases of information collected by or for the War Production Board and the Civilian Production Administration during the war and reconversion periods by the Census Bureau or other Federal agencies.

The Facts for Industry series of releases makes available to manufacturers, trade groups, and other users of industrial data current figures that are useful to them in their day-to-day operations and forward planning. The current reports also present an accurate picture of industrial trends over a period of time.

If you wish to receive a copy of the Facts for Industry "List of Publications" address your request to: Bureau of the Census, Washington 25, D. C.

Saran Coating Materials. Dow offers technical data booklets on two new Saran coating materials—Saran F-120 a solvent soluble resin imparting very low moisture vapor transmission and Saran F-122 a latex forming a continuous film upon air drying. Address requests to The Dow Chemical Company, Plastics Division, Midland, Michigan.

GPM
IRON HYDROXIDE
The mark of
unerring dependability
in purification
GAS PURIFYING MATERIALS CO., INC.
3-15 26th Ave.
Long Island City 2, New York

"JOURNAL" GAS FLOW COMPUTERS

High Pressure
RANGE:
Cu. Ft. of Gas Per Hour—100-10,000 M
Diameter of Pipe—Inches ¾-30
Difference in Absolute Pressure—Lbs. per sq. in., 1-500
Sum of Absolute Pressures—Lbs. per sq. in., 2000-20
Specific Gravity—1.5-.35
Length of Pipe—Feet 100-5000
Length of Pipe—Miles 1-250

Low Pressure
RANGE:
Cu. Ft. of Gas Per Hour—10 to 500 M
Pipe Diameter—¾" to 48" (including standard and actual weight up to 4")
Pressure Loss—Inches .01-10
Length of Pipe—Feet 30-30,000
Specific Gravity—1.5-.35
Constants—1400-1000

Made of durable celluloid, encased in a convenient leatherette cover with complete instructions. Actual size 6¼ x 7½

$4.00 Each Postpaid

American Gas Journal
53 Park Place, New York 17

Wanted: Competent young man experienced in merchandising, preferably with gas utility or liquefied petroleum gas background for

Foreign Service

★ *Write to Box No. 151, including full information on the following: Personal Data (age, family status, etc.) Education . . . Details of experience . . . All letters are held as confidential.*

American Gas Journal

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IRON OXIDE

I can supply you with the Crude Bog Iron Ore, used in Coke and Gas plant, as purifier.

WILLIAM VENNES
259 - 6th Avenue
Grand'Mere, Que.
Canada

ENGINEERS WANTED

Wanted—Gas Engineers with experience on design of Carburetted Water Gas Plants and Equipment. United Engineers & Constructors Inc., 1401 Arch Street, Philadelphia 5, Pa.

WANTED—Manager

Manager for Bottled Gas operation in Northeast. Both retail and wholesale. Good opportunity. Address Box 152, c/o American Gas Journal, 53 Park Place, New York City 7, N. Y.

WANTED TO BUY

Wanted: Domestic Gas Meters, Any Kind.

Illinois Electric & Gas Company
Murphysboro, Illinois

Position Wanted

I am 46 years old and have had 20 years of experience in gas distributive work; 13 years in Street Dept. and 7 years Shop work in both artificial and natural gas; several years as supervisor and gas heating installations; willing to go any place for right opportunity. Address Box 150, c/o American Gas Journal, 53 Park Place, New York City 7.

Safety and Relief Valves. Twenty basic designs of improved safety and relief valves are described and illustrated in a new condensed bulletin (#40) released by the Farris Engineering Company, 400 Commercial Avenue, Palisades Park, New Jersey.

The bulletin gives the essential construction and operation specifications briefly. Valve designs described include high-pressure types, liquid relief types, diaphragm relief types, full-venturi and semi-venturi types of the Farris safety, relief, safety-relief and pop valves.

OPPORTUNITY

Dealerships available on well engineered, high quality gas conversion burner. AGA approved, excellent appearing, M-H Control. Will fit almost every boiler or furnace. Shipped complete as a compact assembled unit. Available to high grade dealers or distributors who are interested in maintaining their reputation for good equipment.

We have manufactured industrial gas equipment since 1914.

Write to: Standard Fuel Engineering Co., 667 Post Ave., So., Detroit 17, Michigan.

The Reliable Shut-Off for Street Mains

THE GOODMAN STOPPER

Now has the "Z" handle for easy manipulation. When locked in place it holds. Stopper cannot slip. Gas cannot pass. Adjusted in 30 seconds.

Ask for circulars on this and other distribution equipment.

Nearly a half century of service to the Gas Industry.

Safety Gas Main Stopper Co.
523 Atlantic Avenue, Brooklyn, New York

Holder Station Control

(Continued from page 37)

prise the power plant, although only one boiler is normally required. Each boiler has 1,335 sq. ft. of steam heating surface, is rated at 318,000 B.T.U. output per hour and operates at 15 lbs. per sq. in. maximum.

These boilers supply heat for a Whitlock Type "S" #9—6 pass indirect heat exchanger.

The holder water is circulated through the indirect heater with an Allis-Chalmers, Type SS-HH motor-driven pump.

Circulating water is supplied to the holder tank through three ⅛" extra heavy pipe jets and to the cup through two ⅛" standard jets. These jets are capable of delivering approximately 6 G.P.M. at 20 lbs. jet pressure or 7.5 G.P.M. at 30 lbs.

In the event of power failure, a Modutrol motor valve will open by spring pressure and allow town water to flow through the circulating lines to keep the system from freezing. When power is restored, this valve closes electrically, reutrning the system to holder water recirculation.

We consider that the mechanical equipment in this unattended holder has performed satisfactorily and can say that the most attention it receives is during the heating season when a general inspection is made daily.

Presented at the Operating Division Meeting, The New England Gas Assn., Providence, R. I., May 22nd, 1946.

Water Heating

(Continued from page 41)

rinse water *must* be supplied at minimum rate of flow of 5 gallons per minute. In the Two Tank type with final rinse and in the Conveyor Type machines a slightly lower *minimum* rate of flow of 180° water—approximately 4 to 4½ gallons per minute—is sufficient for the final rinse.

(3) Immersion Type Dishwashers. In this type of dishwasher both the washing and rinsing operations occur while the dishes — packed in wire baskets — are submerged in the washing solution and rinse water. The solution in the wash tank is pump re-circulated laterally through the tank over the surface of the dishes which are so arranged in the baskets as to have their surfaces parallel to the direction of the water flow. The washing solution is maintained at proper temperature (130 to 140° F.) by means of a thermostatically controlled gas burner beneath, or a steam coil of the injector type or electric immersion heating element in the bottom of the wash tank. After washing, the baskets containing the dishes are lifted from the wash tank and immersed in the still water in the rinse compartment or tank. The rinse water is likewise maintained at the required temperature (180° F.) by means of a thermostatically controlled gas burner beneath, or a steam coil or electric element in the bottom of the rinse tank.

Part 2 of Chapter 5 will discuss and tabulate hot water requirements for mass feeding and mass housing as well as methods of computing hot water demand.

Rochester Gas & Elec. Co. Appoints Dept. Heads

Appointment of two new department heads to fill vacancies created by recent deaths has been announced by the Rochester Gas and Electric Corporation of Rochester, N. Y.

Sydney Alling was named manager of the Industrial Department to succeed the late Ivar Lundgaard. He entered the employ of the R. G. & E. in 1911 and served with the engineering, construction, distribution and industrial departments. Since 1931 he has been on the staff of the Industrial Department.

Ralph H. McCumber has been appointed Superintendent of the Electrical Department to succeed Walter J. Consler, recent victim of an automobile accident. He entered R. G. & E. employ at Station 3 and filled various positions in the department of electric and steam generation. Since 1940 Mr. McCumber has been Superintendent of Steam and Electric Generation.

An Unique Reward for Safe Driving

William E. Norton, employe of the Chattanooga Gas Company, Chattanooga, Tenn., was honored as the week's safe driver in the "Orchid for Safety" program presented over WAGC.

Norton received the orchid from Traffic Officer R. T. Bell. "Norton held out his hand indicating a left turn at least 50 feet before reaching street intersections and brought his truck to the center of the street, thus correctly making the left turn without cutting the corners," said Officer Bell in presenting the orchid for safe and courteous driving.

Norton, a gas fitter, has been connected with the gas company for 21 years and during the 19 years he has been driving a truck he has never been ordered to court for any traffic infringement. The weekly program is sponsored by the Chattanooga Safety Council and the police department. Orchids are donated by local florists.

Western Canadian Utility

E. W. Bowness has been appointed chairman of the board of the Canadian Western Natural Gas, Light, Heat and Power Company Limited. The company controls the Calgary Gas Company, Calgary; Northwestern Utilities Limited, Edmonton; and the Canadian Utilities Limited, which has power plants in various areas of Alberta and Saskatchewan. Mr. Bowness was formerly vice-president and managing director of all three companies, and as chairman of the board he will continue to take an active part in the affairs of each of the organizations. P. D. Mellon, general superintendent and chief engineer of the company, has been appointed vice-president.

Dennis K. Yorath has been appointed secretary of the Calgary Gas Company, succeeding H. S. Watts, in addition to being secretary of the other two companies. Mr. Watts, who has been secretary of the Gas company for the past 33 years, was released from his position at his own request because of ill health. He will continue as a director of the company, however, and will be in charge of the insurance department for all three companies.

W. L. McPhee was appointed treasurer and S. C. Murison assistant secretary. Other Gas company officers are F. A. Brownie, who was appointed assistant to the president for each company, and F. A. Smith, who was re-appointed comptroller of all three companies.

Officers of Northwestern Utilities Limited are as follows: president, Mr. Milner; chairman of the board, Mr. Bowness; vice-president, Julian Garrett, who was appointed to that position in addition to being general manager; executive assistant to the president, Mr. Brownie; comptroller, Mr. Smith; secretary, Mr. Yorath; treasurer, J. B. Whelihan; assistant secretary, C. L. Metcalfe.

Officers of Canadian Utilities Limited are: president, Mr. Milner; chairman of the board, Mr. Bowness; vice-president and general manager, B. M. Hill, who was appointed to the position from that of manager of the company; executive assistant to the president, Mr. Brownie; comptroller, Mr. Smith; secretary, Mr. Yorath; treasurer, T. A. Montgomery.

National Metal Congress and Exposition Nov. 18-25

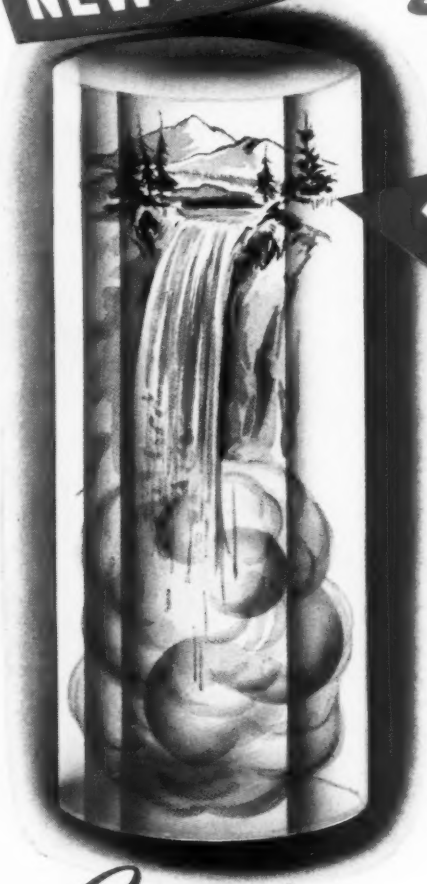
The 28th annual National Metal Congress and Exposition will be held in Atlantic City's Municipal Auditorium for five days beginning November 18th, according to an announcement recently made by W. H. Eisenman, managing director of the event.

Meeting jointly during the NMCE will be the American Society for Metals, The Iron and Steel Division and the Institute of Metals Division of the American Institute of Mining and Metallurgical Engineers, The American Welding Society and the American Industrial Radium and X-Ray Society.

According to Mr. Eisenman, floor plans for the regular 1946 Exposition at Atlantic City have been sent to organizations participating in the 1945 event which was held in Cleveland earlier this year.

NEW HOT WATER FREEDOM

Sparkling Clean Hot Water "Packaged in Glass"



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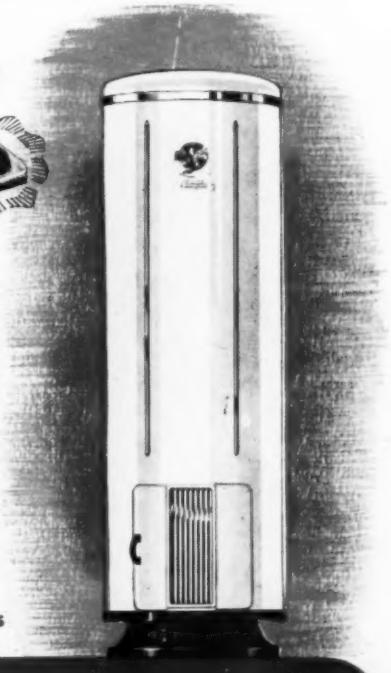

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